

FIG. 1

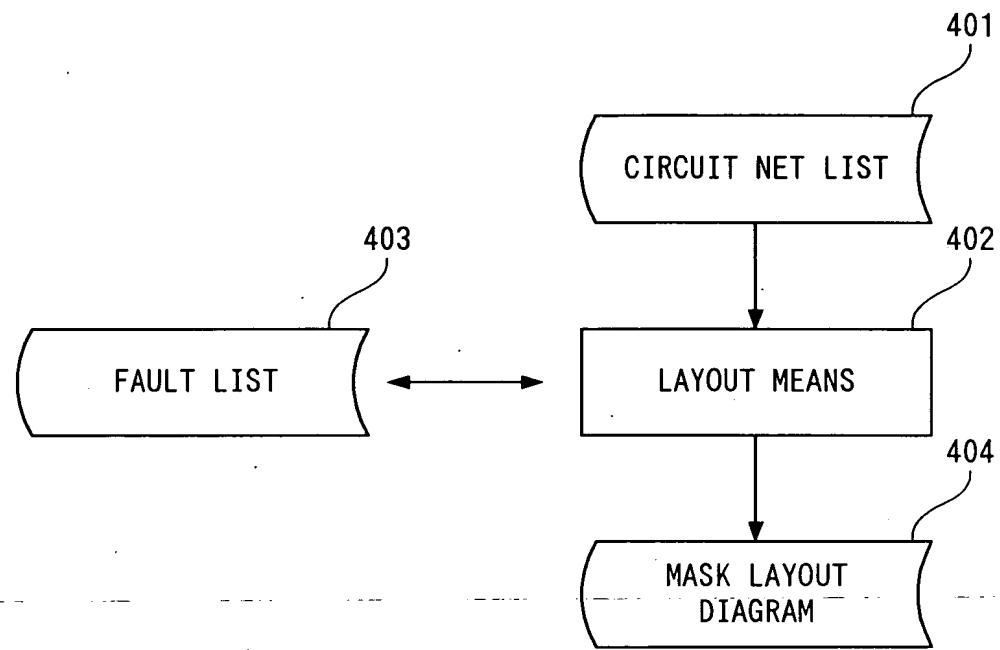


FIG. 2

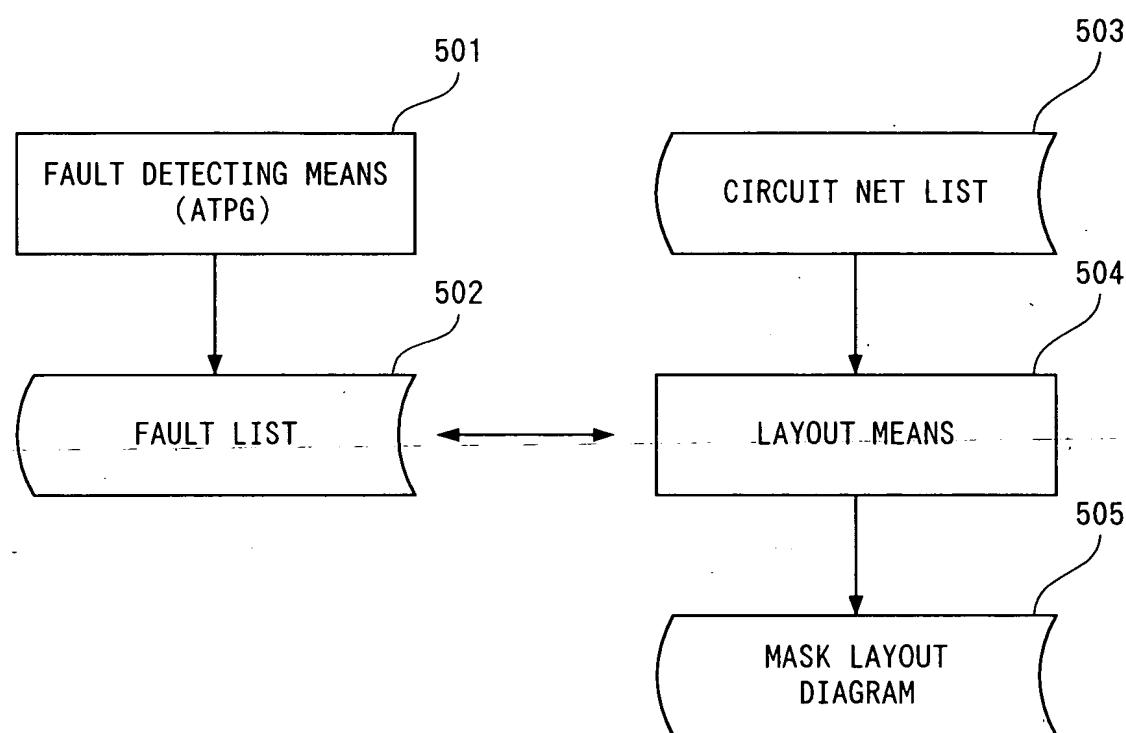


FIG. 3

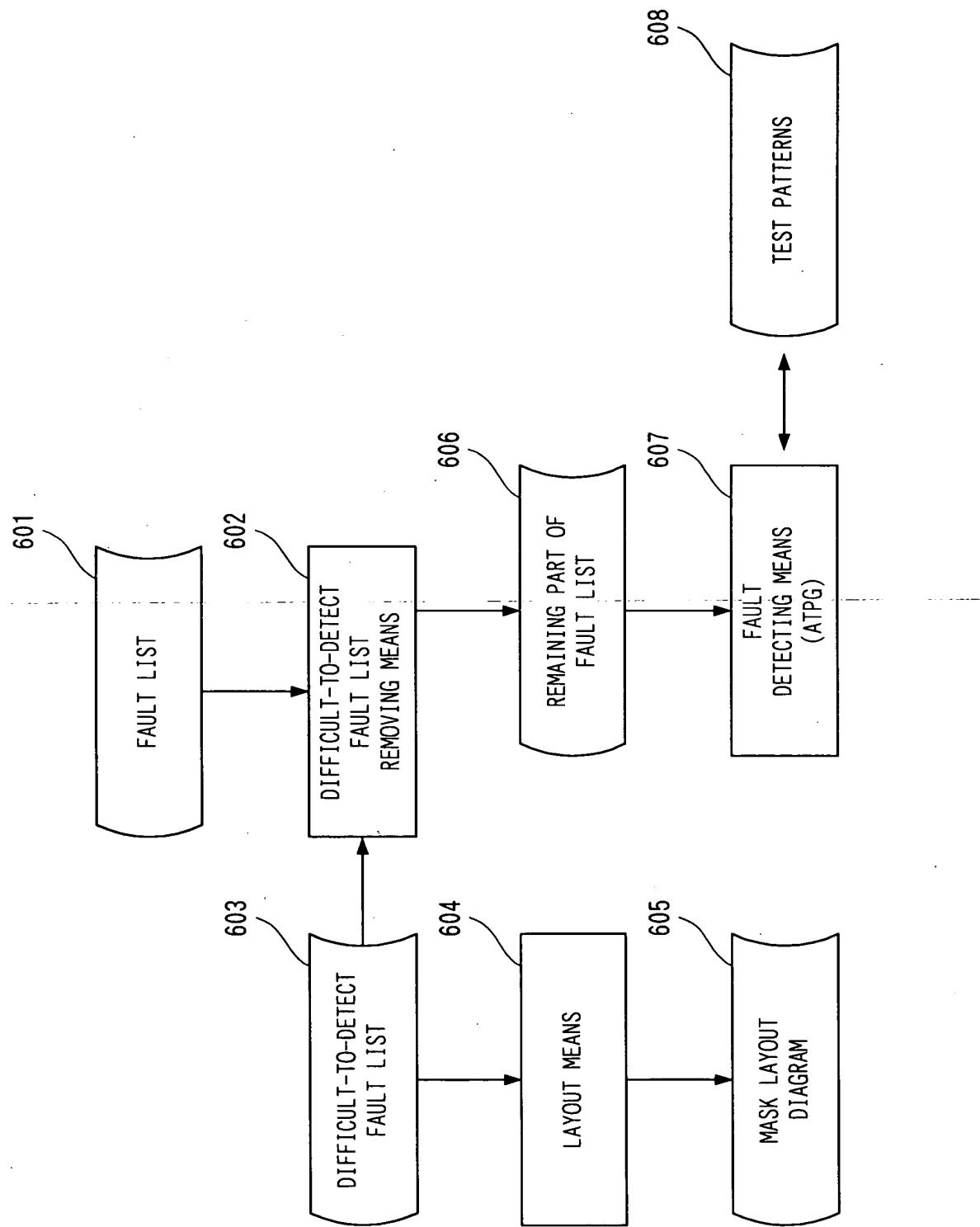


FIG. 4

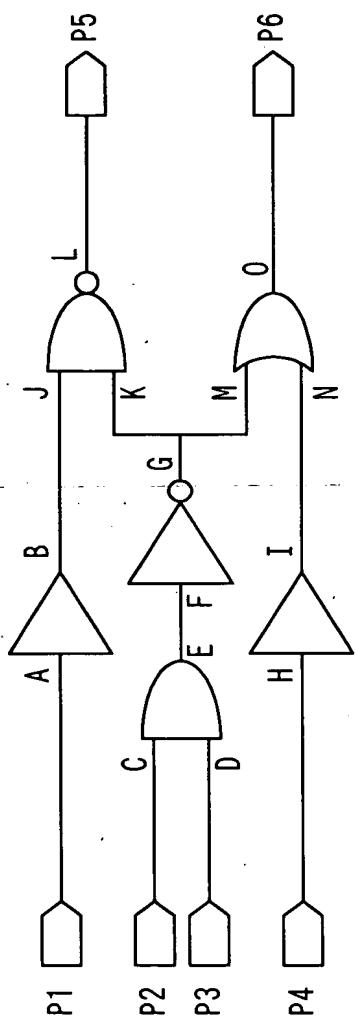


FIG. 5

TARGET FAULT
ONE FAULT AT POINT A
ZERO FAULT AT POINT A
ONE FAULT AT POINT B
ZERO FAULT AT POINT B
ONE FAULT AT POINT C
ZERO FAULT AT POINT C
.....
ONE FAULT AT POINT N
ZERO FAULT AT POINT N
ONE FAULT AT POINT O
ZERO FAULT AT POINT O

FIG. 6

TARGET FAULT	LIKELIHOOD OF FAULT
ONE FAULT AT POINT H	LIKELY TO OCCUR
ONE FAULT AT POINT I	
ZERO FAULT AT POINT F	
ONE FAULT AT POINT G	
ONE FAULT AT POINT M	
ONE FAULT AT POINT O	
.....	
ZERO FAULT AT POINT K	
ONE FAULT AT POINT L	UNLIKELY TO OCCUR

FIG. 7

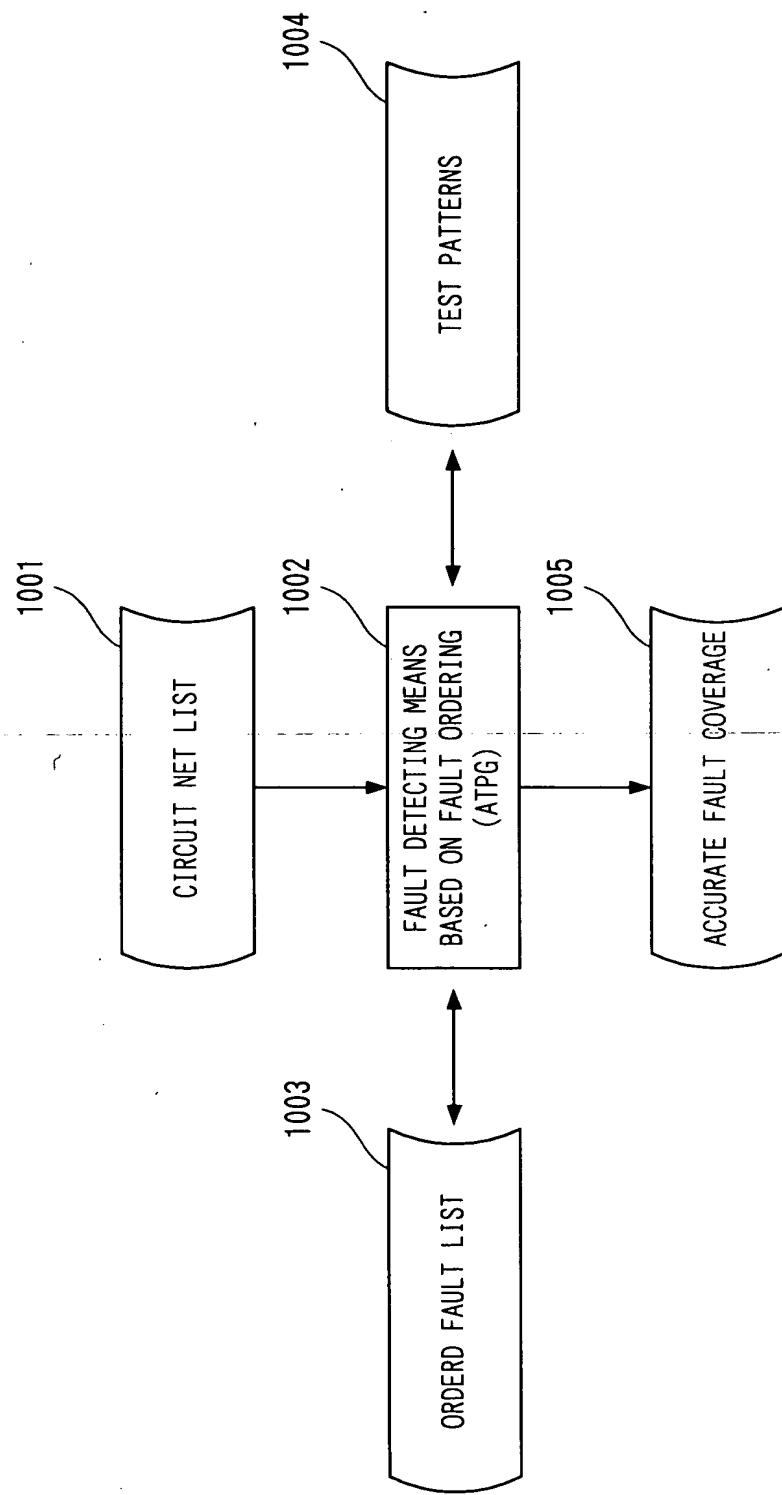


FIG. 8

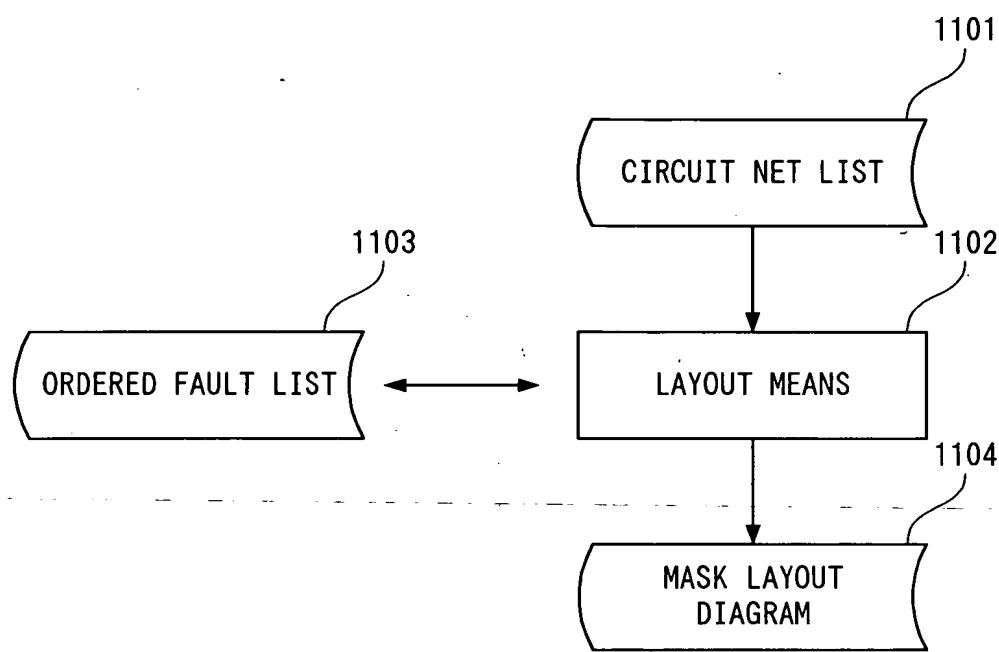


FIG. 9

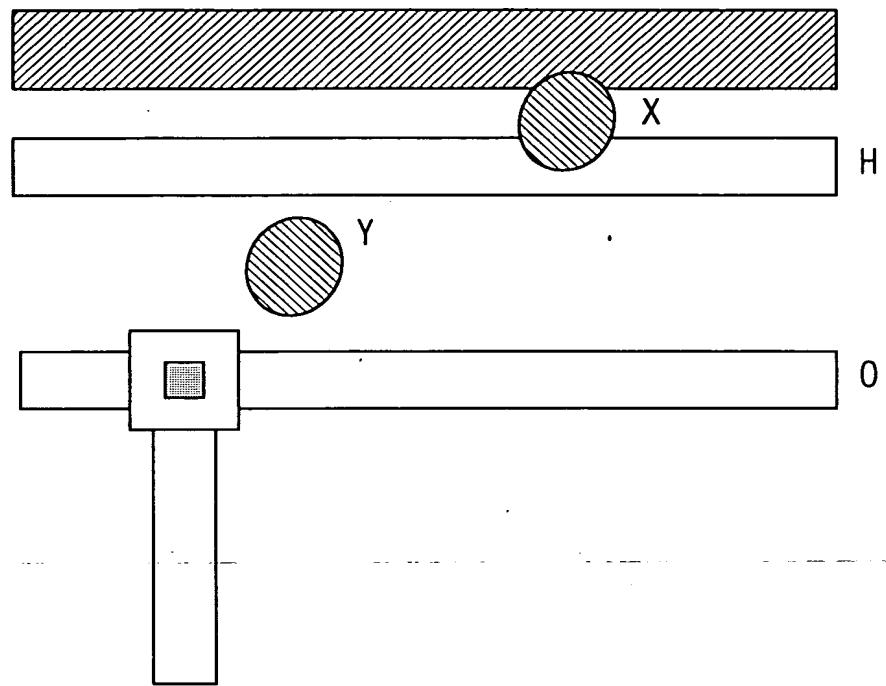


FIG. 10

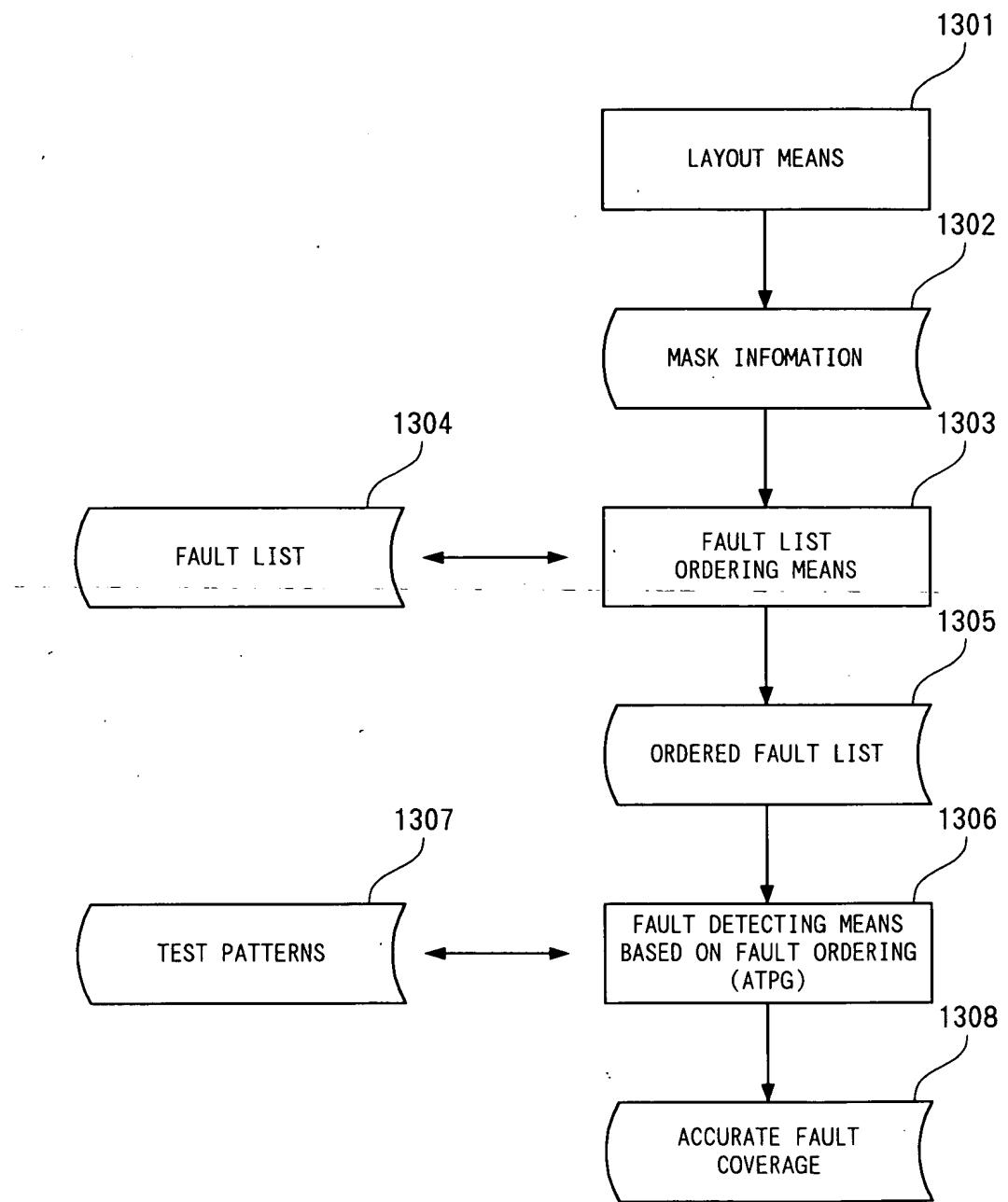


FIG. 11

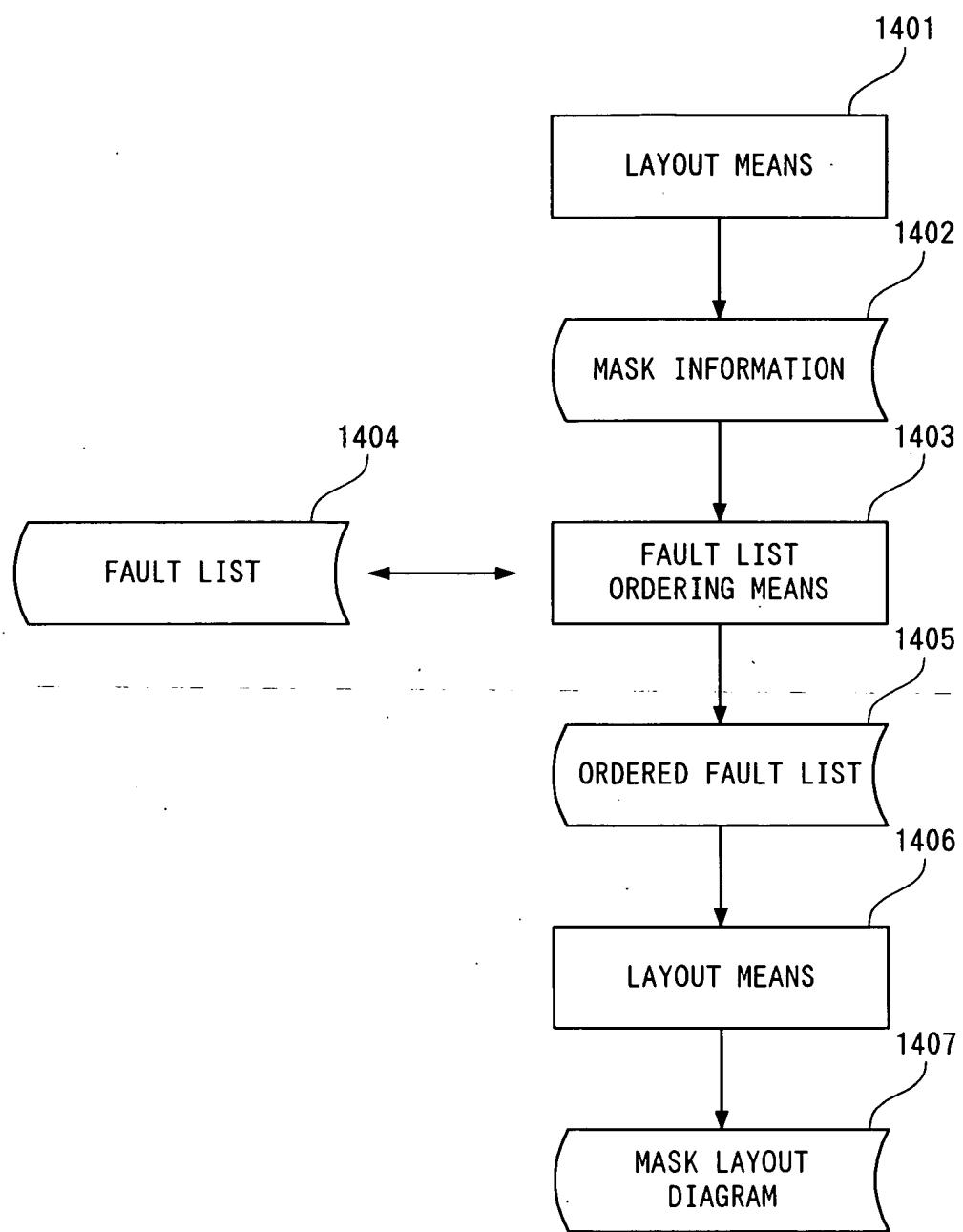


FIG. 12

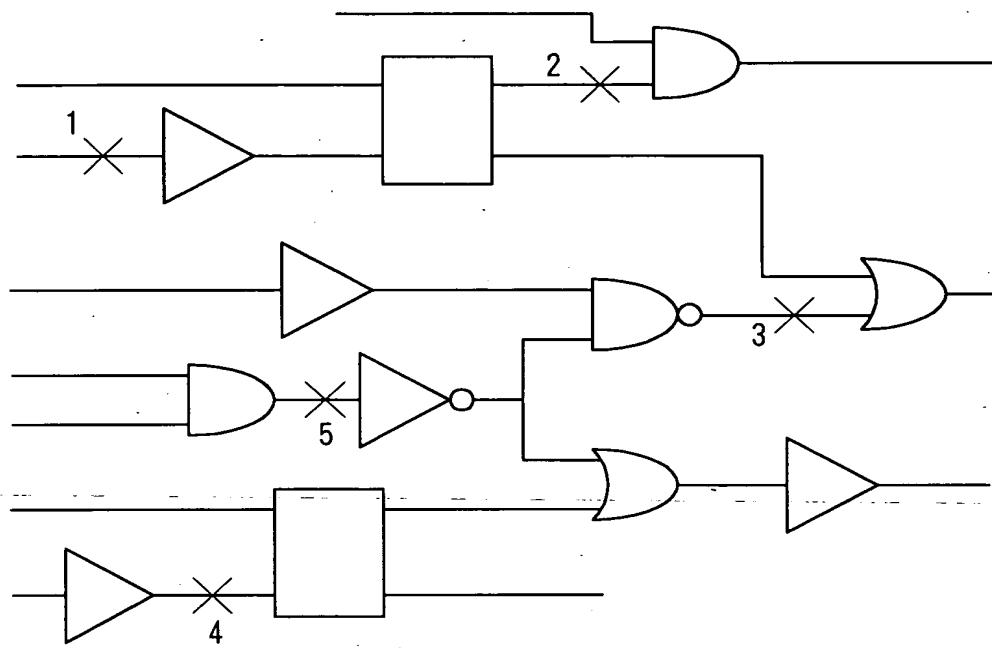


FIG. 13

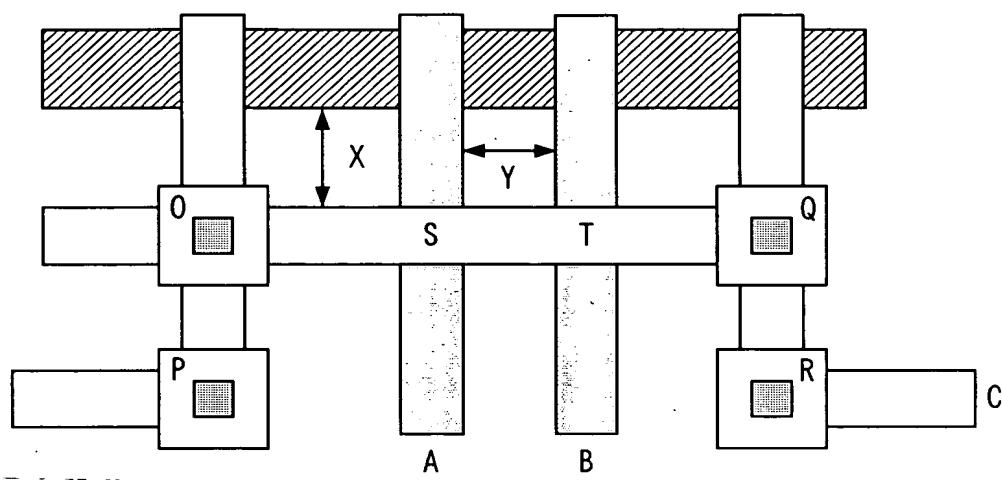


FIG. 14

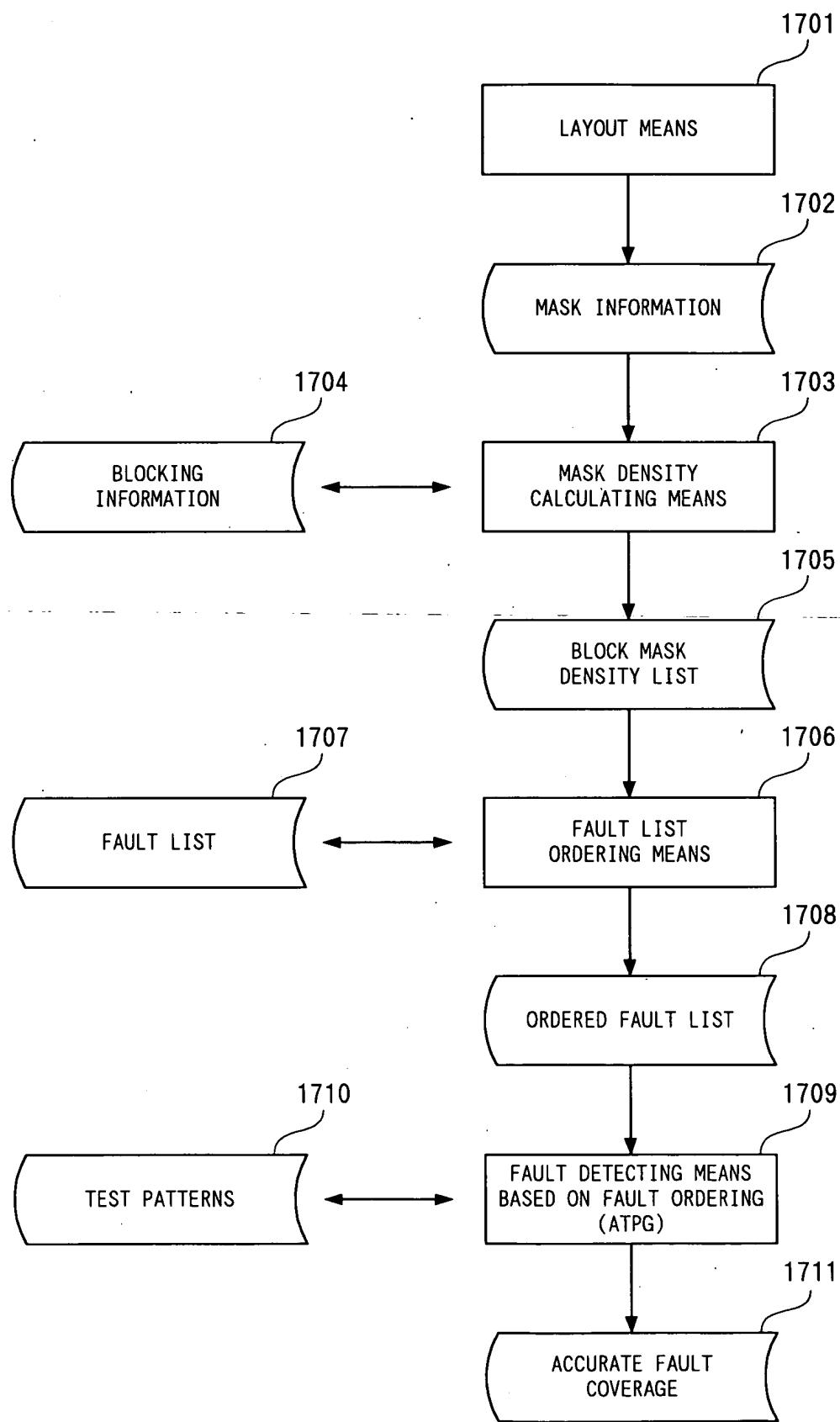


FIG. 15

FIG. 16

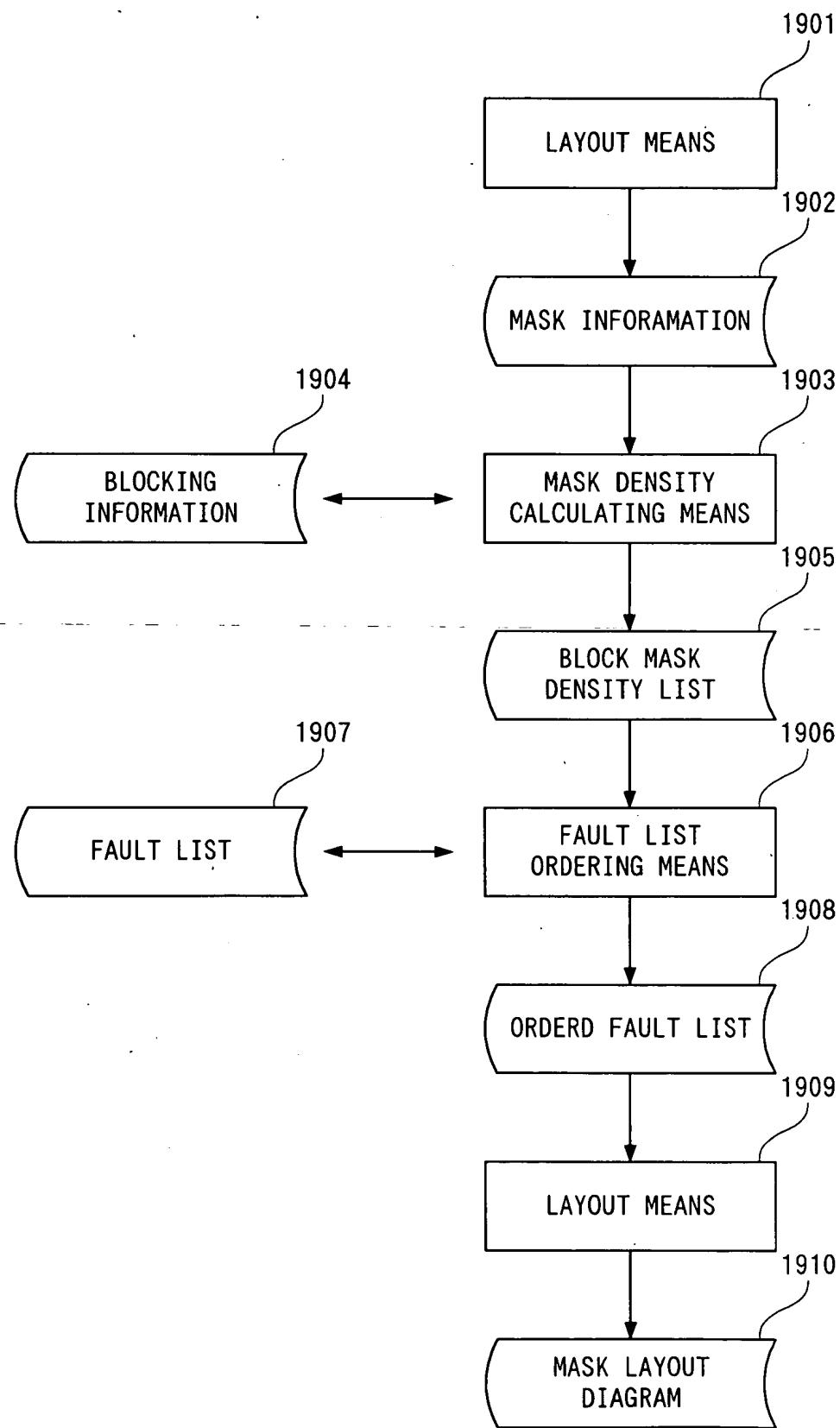


FIG. 17

FIG. 18

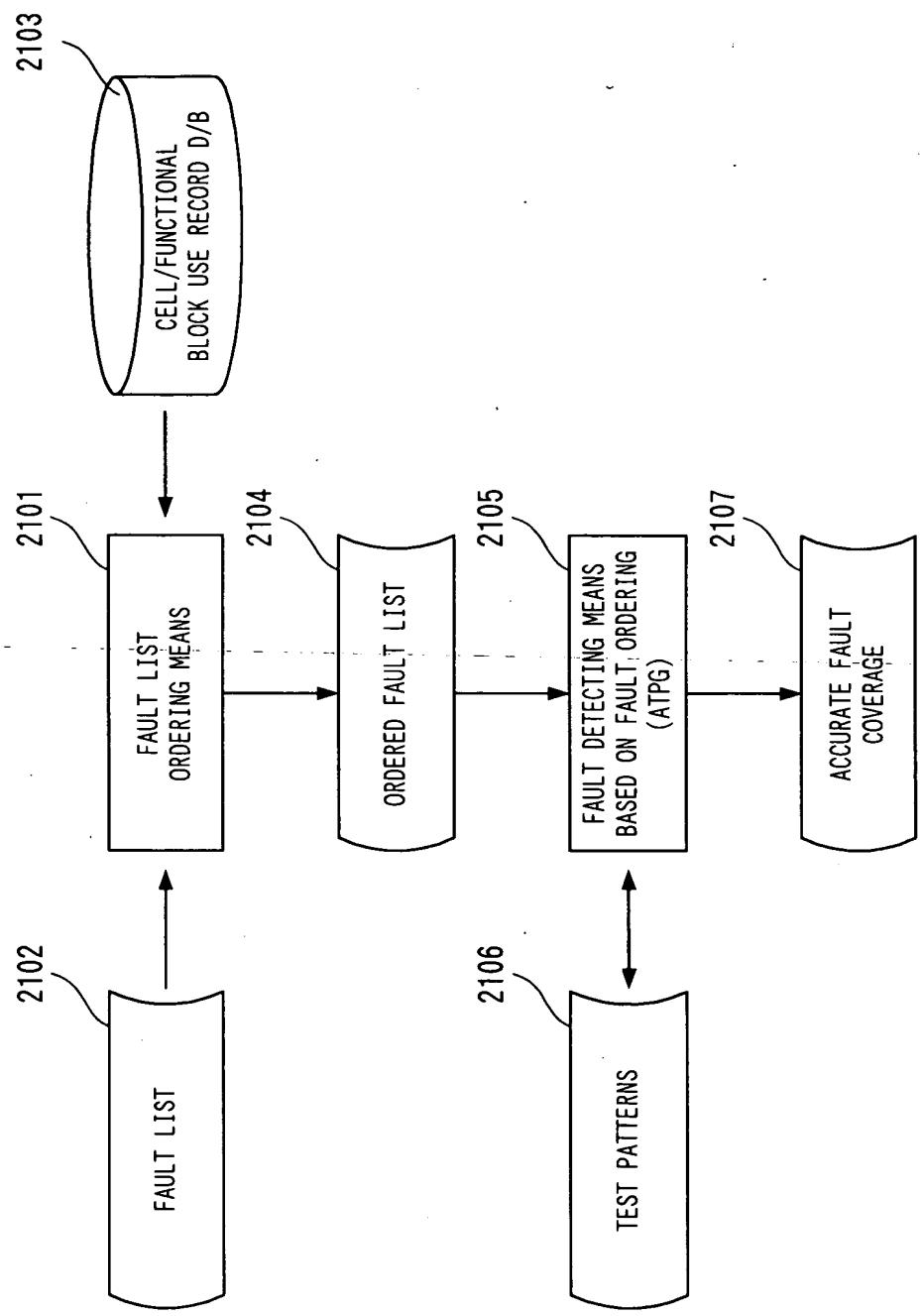


FIG. 19

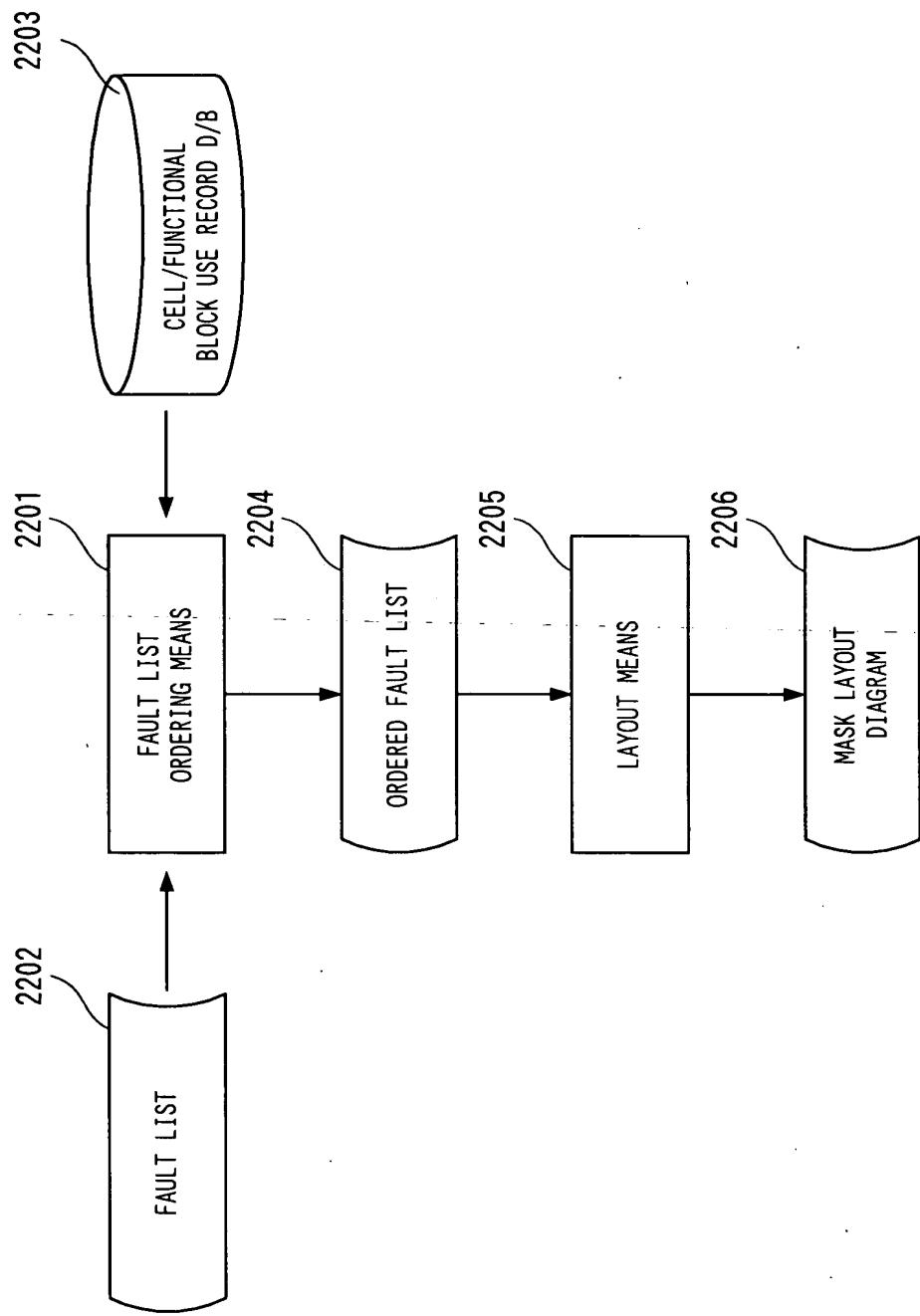


FIG. 20

TARGET FAULT	CONVENTIONAL FAULT WEIGHTING	WEIGHTING BASED ON FAULT LIKELIHOOD
ONE FAULT AT POINT A	1	0.2
ZERO FAULT AT POINT A	1	0.2
ONE FAULT AT POINT B	1	1.8
ZERO FAULT AT POINT B	1	1.6
ONE FAULT AT POINT C	1	0.5
ZERO FAULT AT POINT C	1	0.5
.....
ONE FAULT AT POINT T	1	1.0
ZERO FAULT AT POINT T	1	1.0

FIG. 21

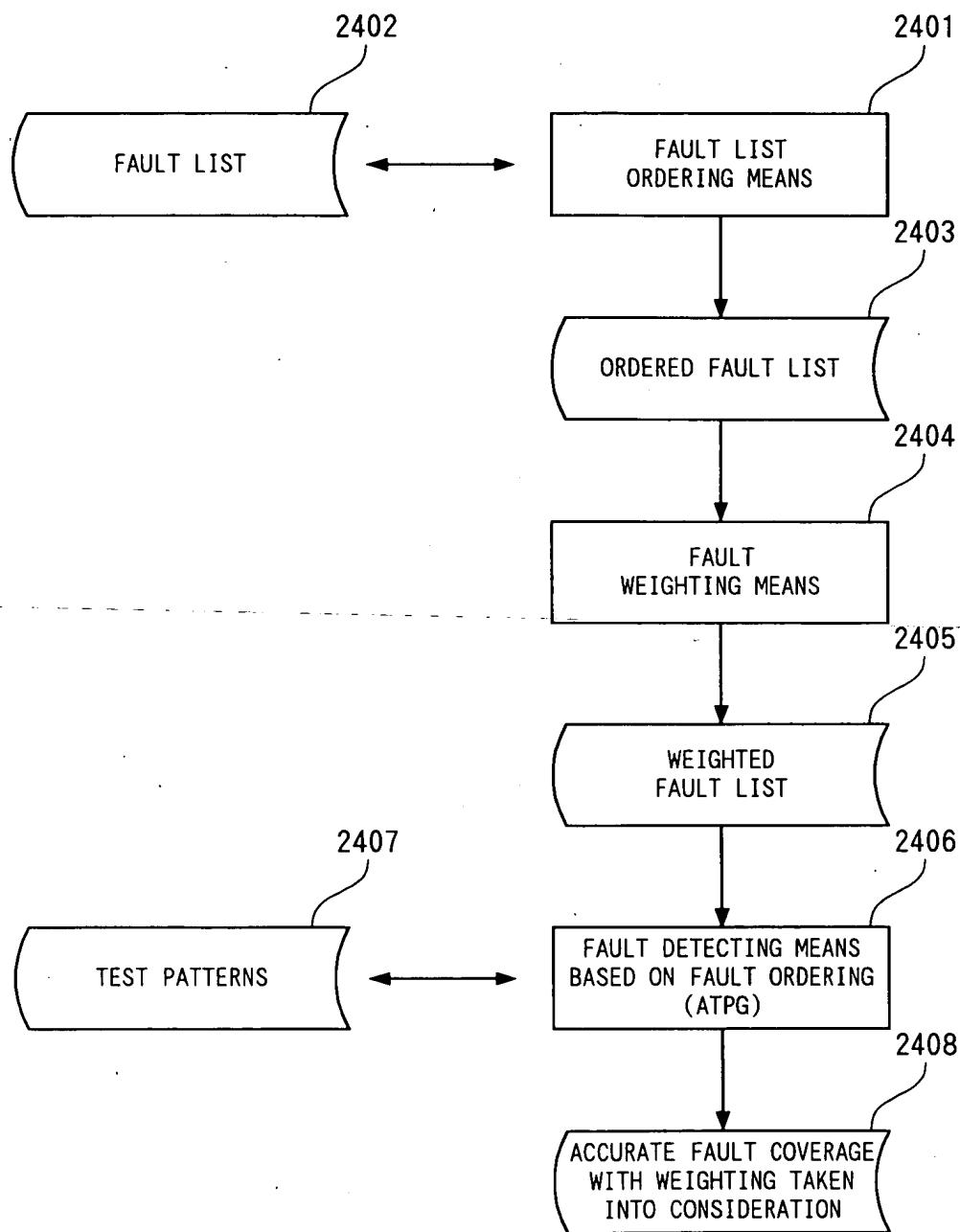


FIG. 22

TARGET FAULT	WEIGHTING
ONE FAULT AT POINT H	1.95
ONE FAULT AT POINT I	1.90
ZERO FAULT AT POINT F	1.85
ONE FAULT AT POINT G	1.80
<hr/>	
ZERO FAULT AT POINT S	1.05
ZERO FAULT AT POINT T	1.00
ZERO FAULT AT POINT B	0.95
<hr/>	
ZERO FAULT AT POINT K	0.10
ONE FAULT AT POINT L	0.05

FIG. 23

TARGET FAULT	WEIGHTING	DETECTED/ UNDERECTED DETERMINATION
ONE FAULT AT POINT H	1.95	DETECTED
ONE FAULT AT POINT I	1.90	DETECTED
ZERO FAULT AT POINT F	1.85	UNDETECTED
ONE FAULT AT POINT G	1.80	DETECTED
.....
ZERO FAULT AT POINT S	1.05	UNDETECTED
ZERO FAULT AT POINT T	1.00	DETECTED
ZERO FAULT AT POINT B	0.95	UNDETECTED
.....
ZERO FAULT AT POINT K	0.10	UNDETECTED
ONE FAULT AT POINT L	0.05	DETECTED

FIG. 24

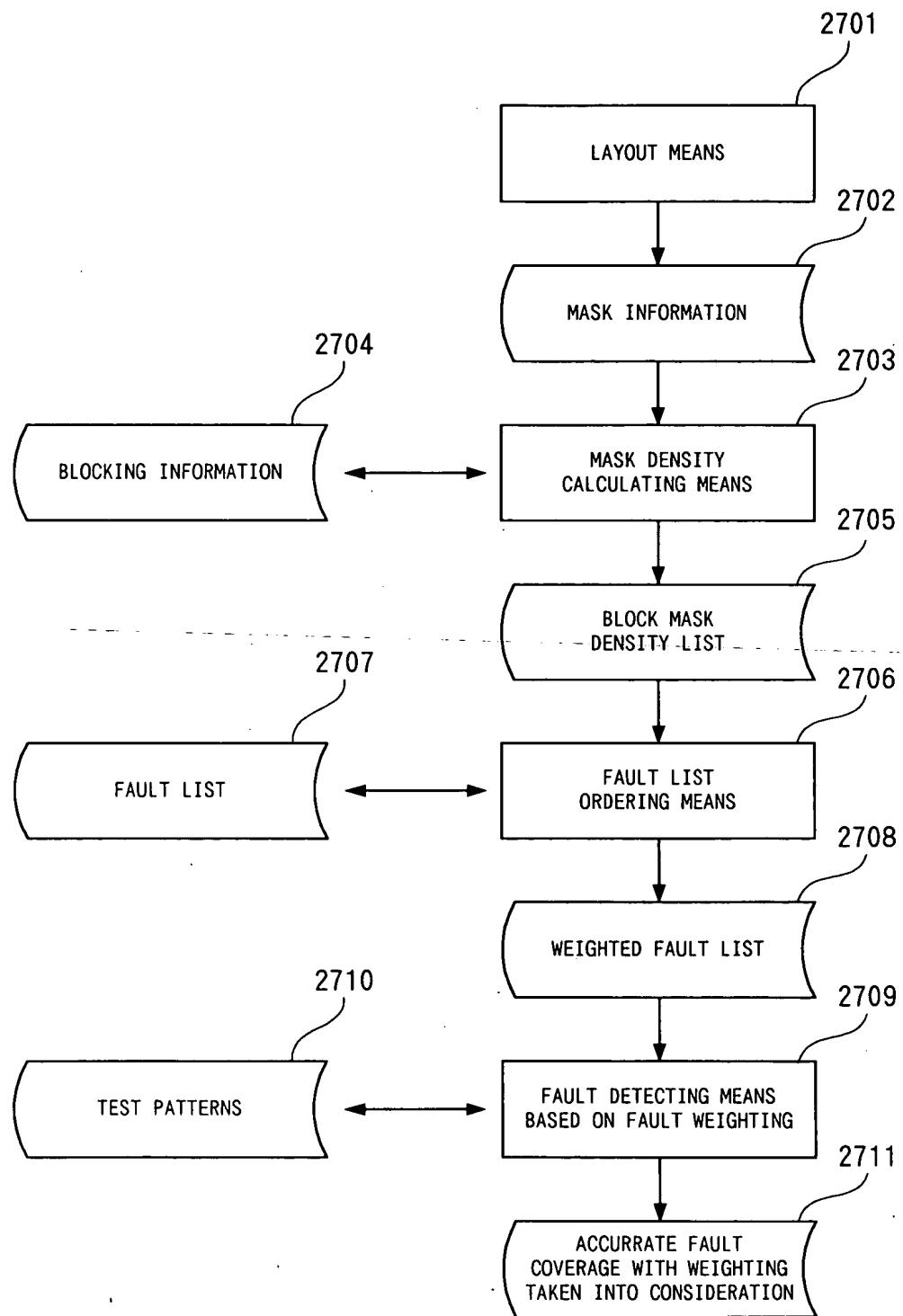


FIG. 25

TARGET FAULT	CELL/ FUNCTIONAL BLOCK	MASK DENSITY	WEIGHTING
	1 CHIP	1.0	
A	BLOCK A	0.9	0.9
B	BLOCK B	0.9	0.9
C	BLOCK C	0.95	0.95
D	BLOCK D	0.95	0.95
E	BLOCK E	0.95	0.95
F	BLOCK F	0.8	0.8

FIG. 26

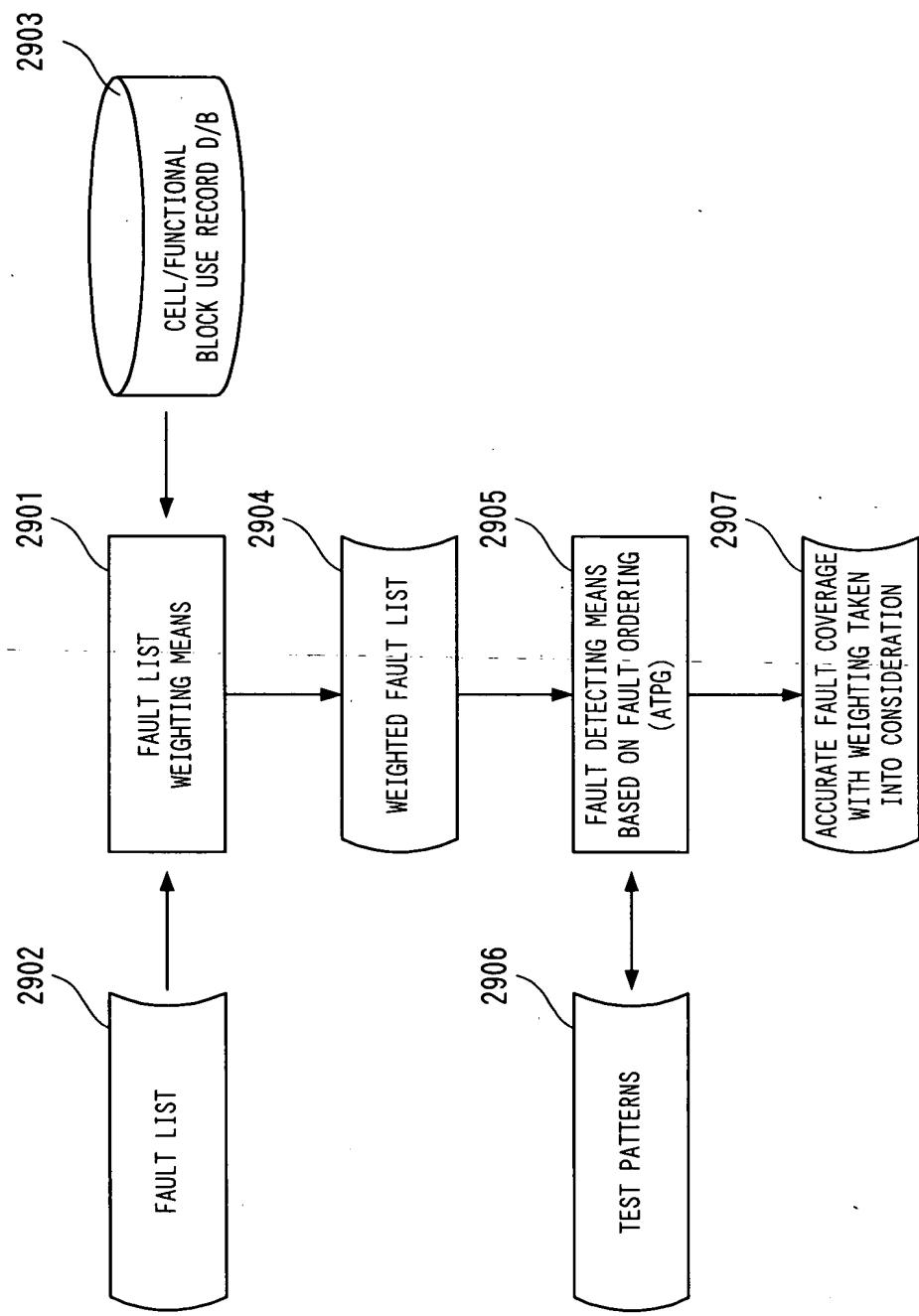


FIG. 27

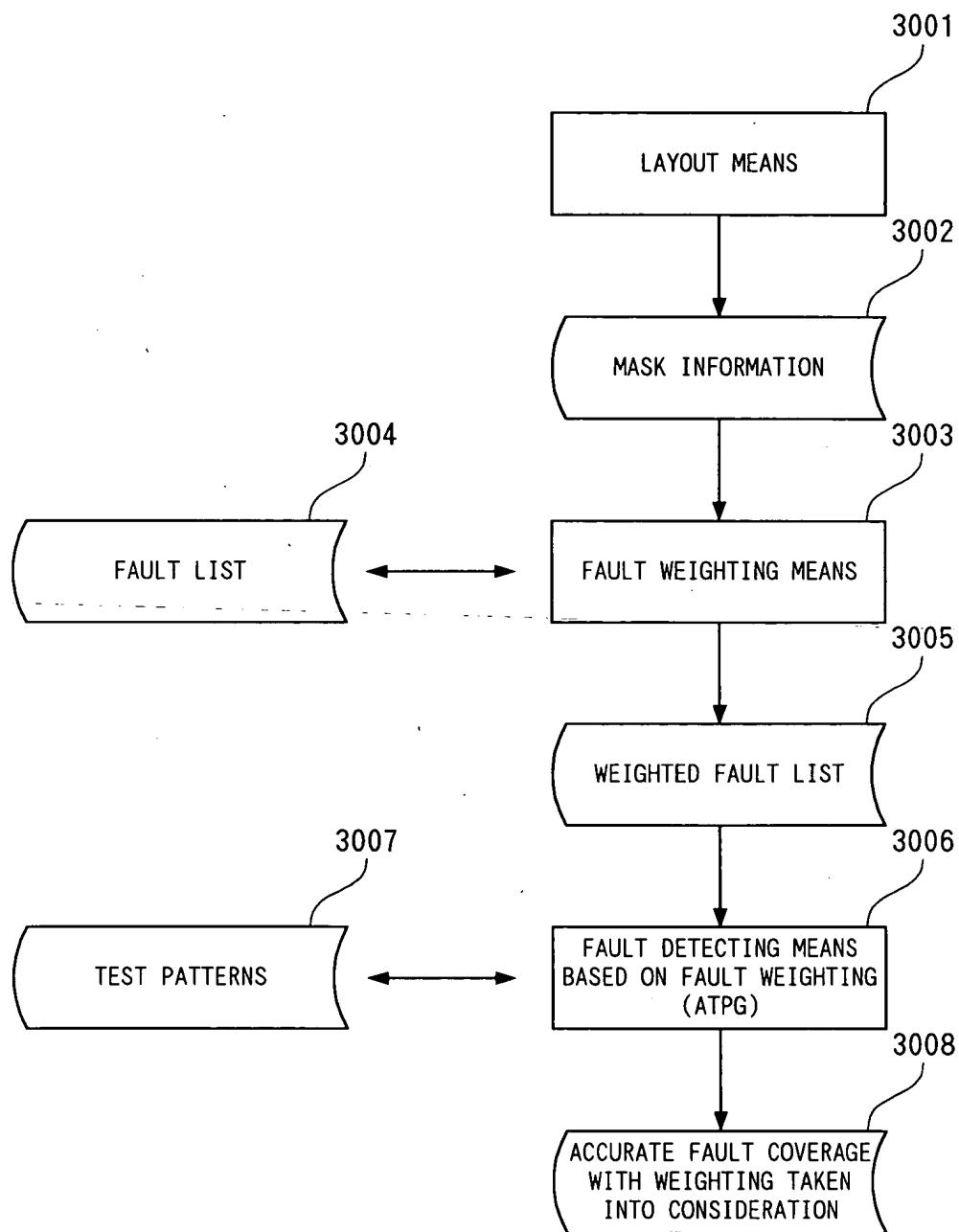


FIG. 28

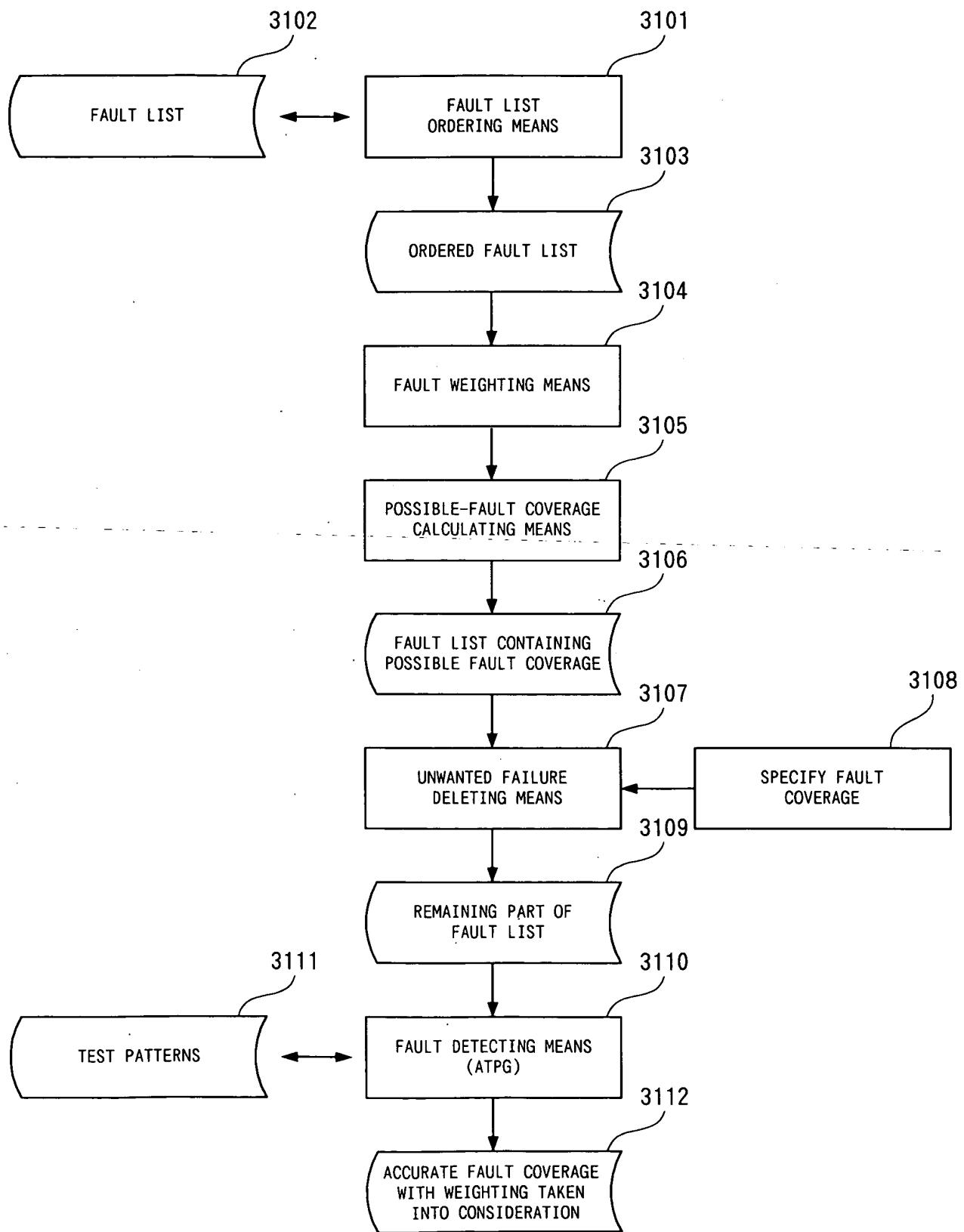


FIG. 29

TARGET FAULT	WEIGHTING	ACCUMULATED POSSIBLE FAULT COVERAGE
ONE FAULT AT POINT H	1.95	5.0%
ONE FAULT AT POINT I	1.90	9.9%
ZERO FAULT AT POINT F	1.85	14.6%
ONE FAULT AT POINT G	1.80	19.2%
.....
ZERO FAULT AT POINT K	0.10	99.9%
ONE FAULT AT POINT L	0.05	100%

FIG. 30

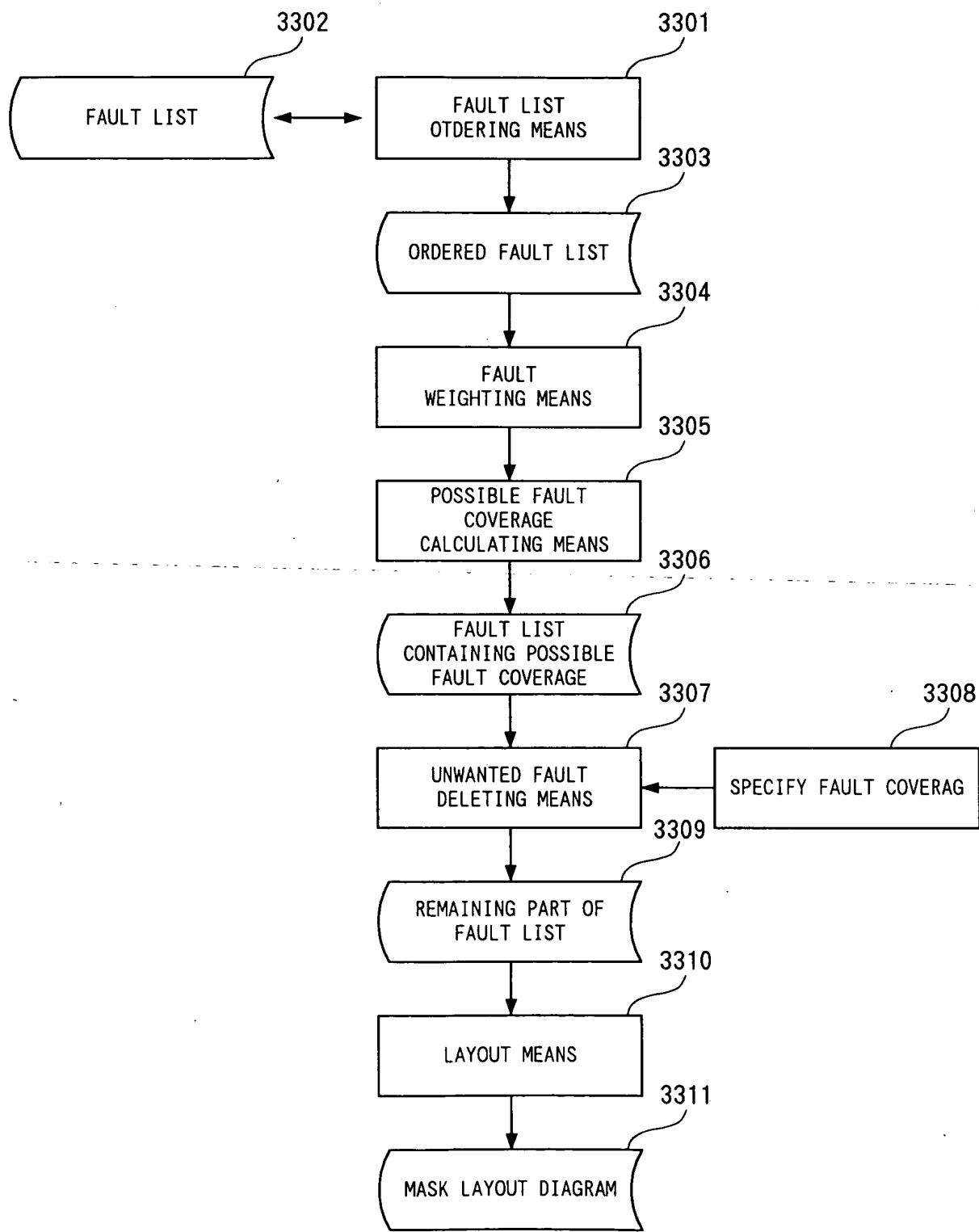


FIG. 31

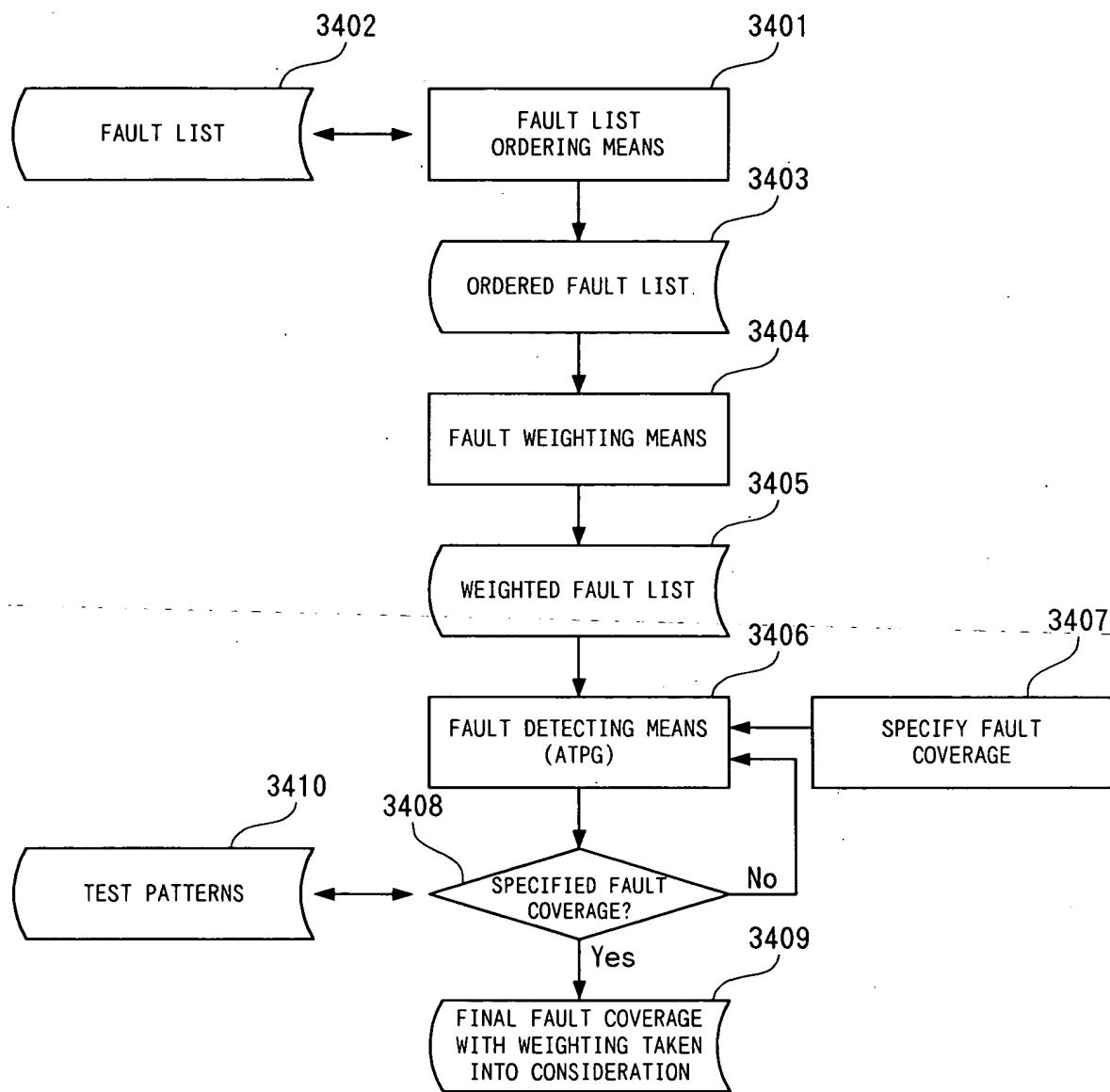


FIG. 32

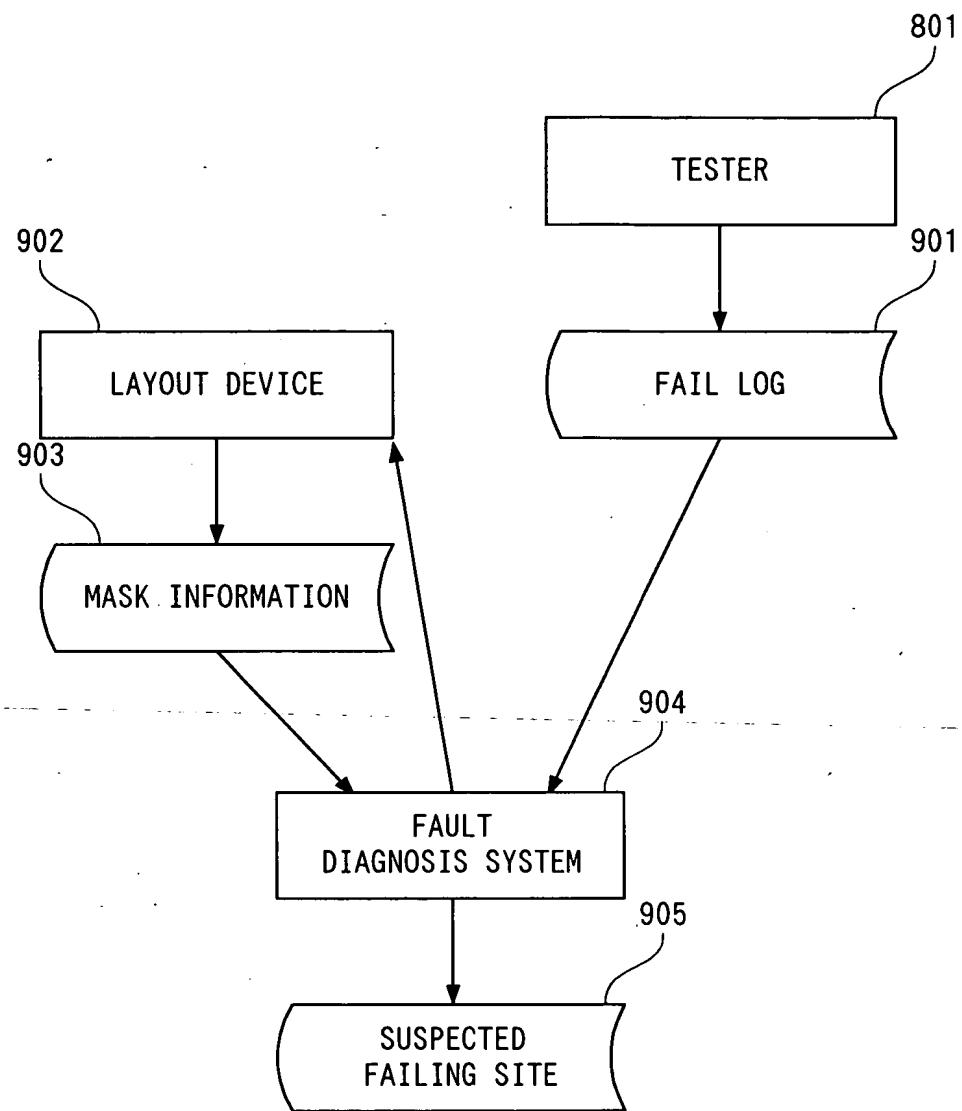


FIG. 33

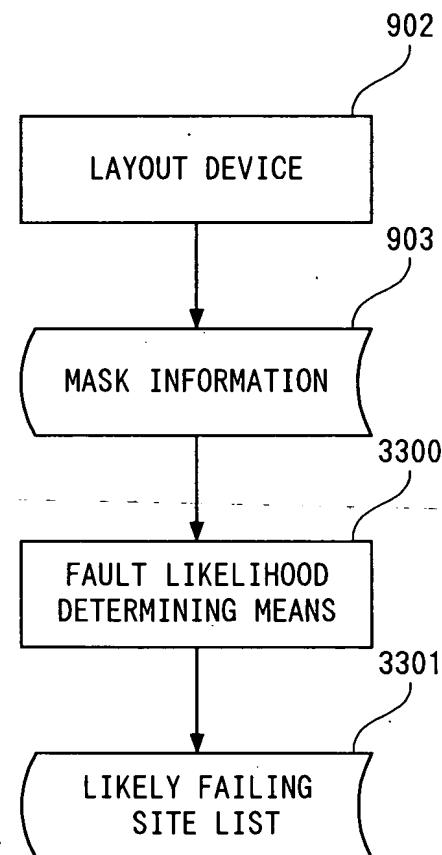


FIG. 34

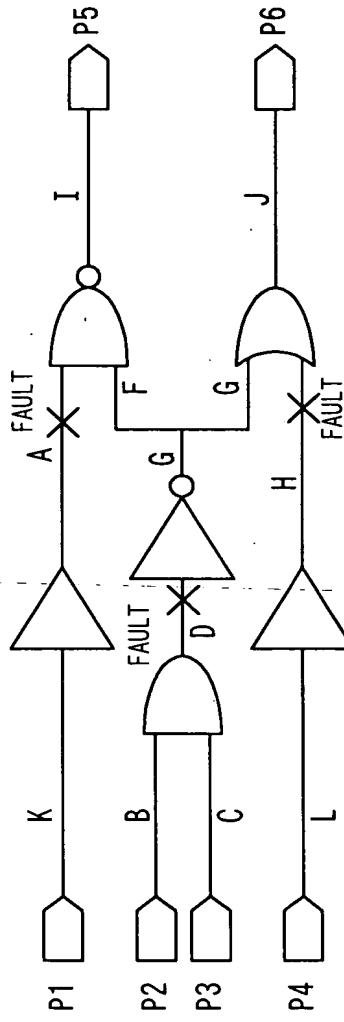


FIG. 35

TIME	TEST PATTERN					
	INPUT				EXPECTED VALUE	
	P1	P2	P3	P4	P5	P6
1	0	0	1	0	H	H
2	1	0	1	1	L	H
3	0	1	1	0	H	L
4	1	1	0	1	L	H
5	1	1	1	1	H	H

FIG. 36

TIME	TEST PATTERN					
	INPUT				EXPECTED VALUE	
	P1	P2	P3	P4	P5	P6
1	0	0	1	0	L	H
2	1	0	1	1	L	H
3	0	1	1	0	H	L
4	1	1	0	1	L	H
5	1	1	1	1	H	H

FIG. 37

TIME	TEST PATTERN					
	INPUT				EXPECTED VALUE	
	P1	P2	P3	P4	P5	P6
1	0	0	1	0	L	H
2	1	0	1	1	L	H
3	0	1	1	0	H	H
4	1	1	0	1	L	H
5	1	1	1	1	H	H

FIG. 38

TIME	TEST PATTERN					
	INPUT				EXPECTED VALUE	
	P1	P2	P3	P4	P5	P6
1	0	0	1	0	H	H
2	1	0	1	1	(H)	H
3	0	1	1	0	H	(H)
4	1	1	0	1	(H)	H
5	1	1	1	1	H	H

FIG. 39

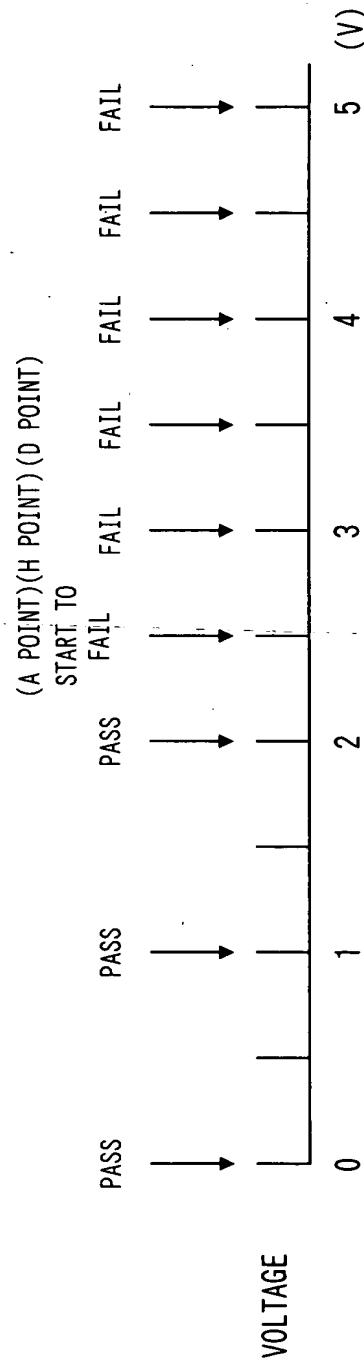


FIG. 40

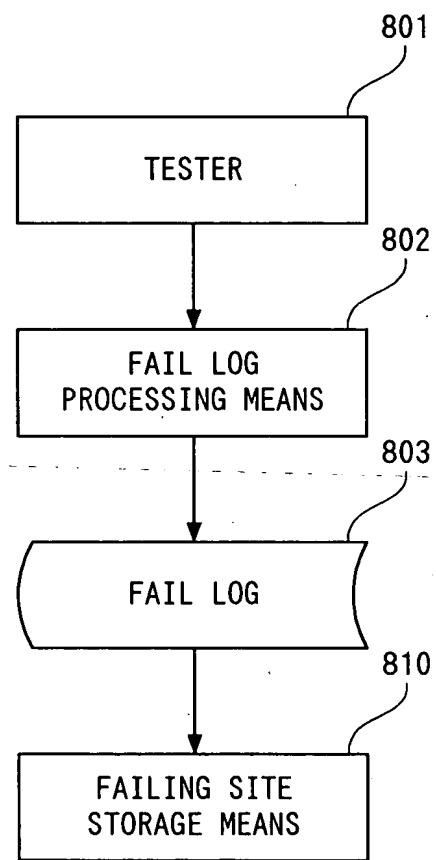


FIG. 41

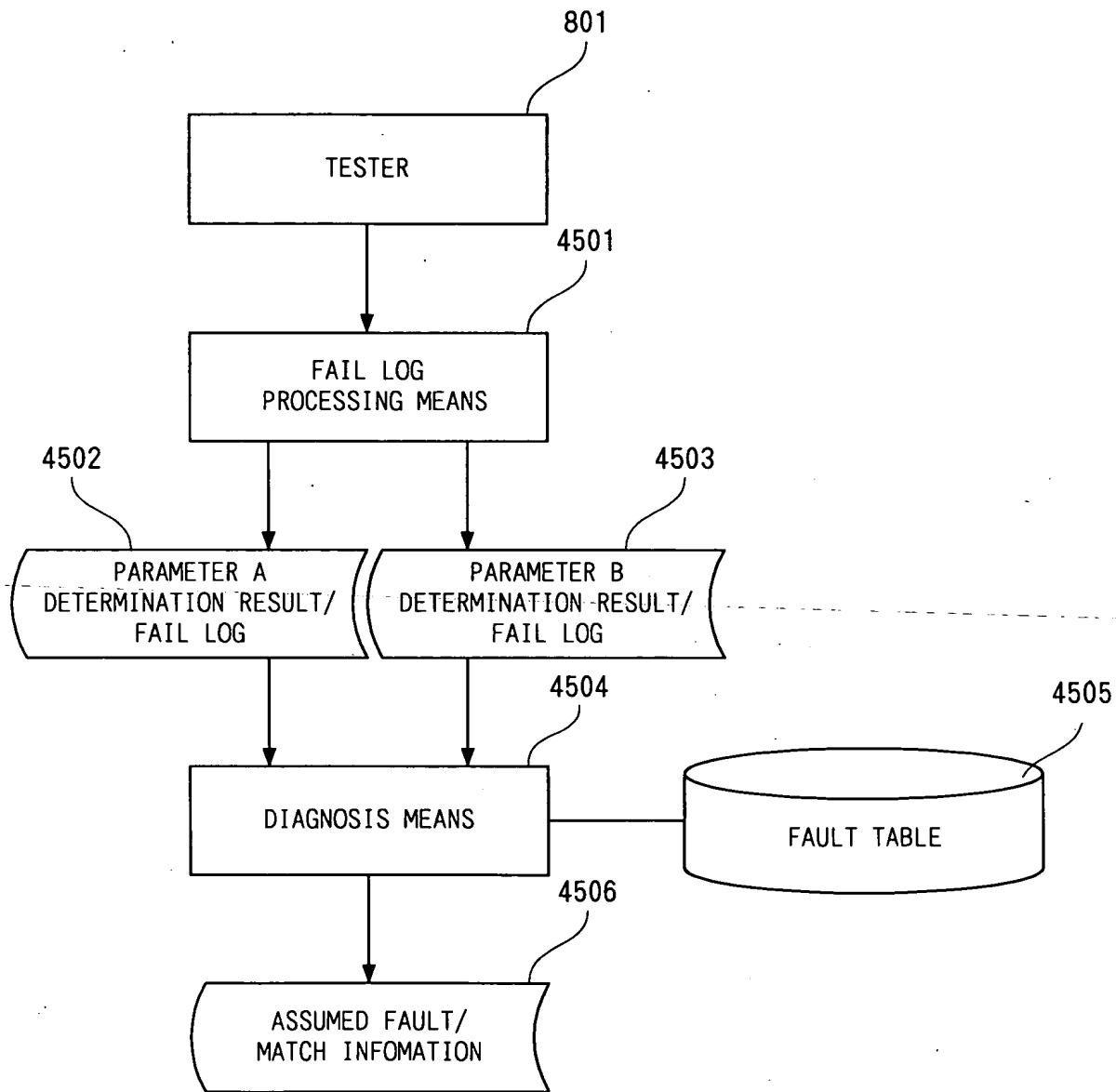


FIG. 42

PARAMETER	LIKELY FAULT
A&B	X FAULT
A&C	Y FAULT
B&C	Z FAULT
A&!B	α FAULT
A&!C	β FAULT

FIG. 43

DO NOT SCALE DRAWINGS

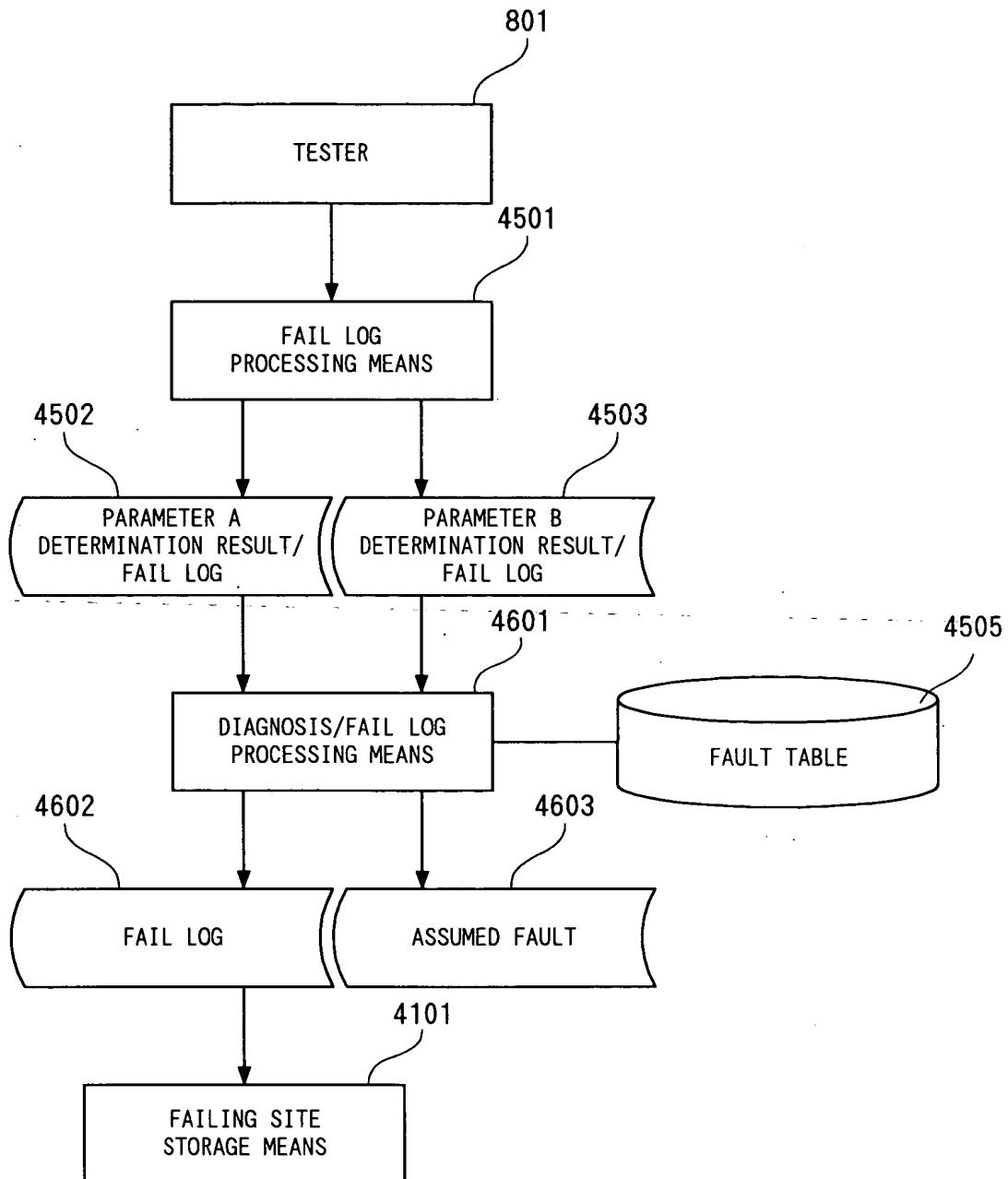


FIG. 44

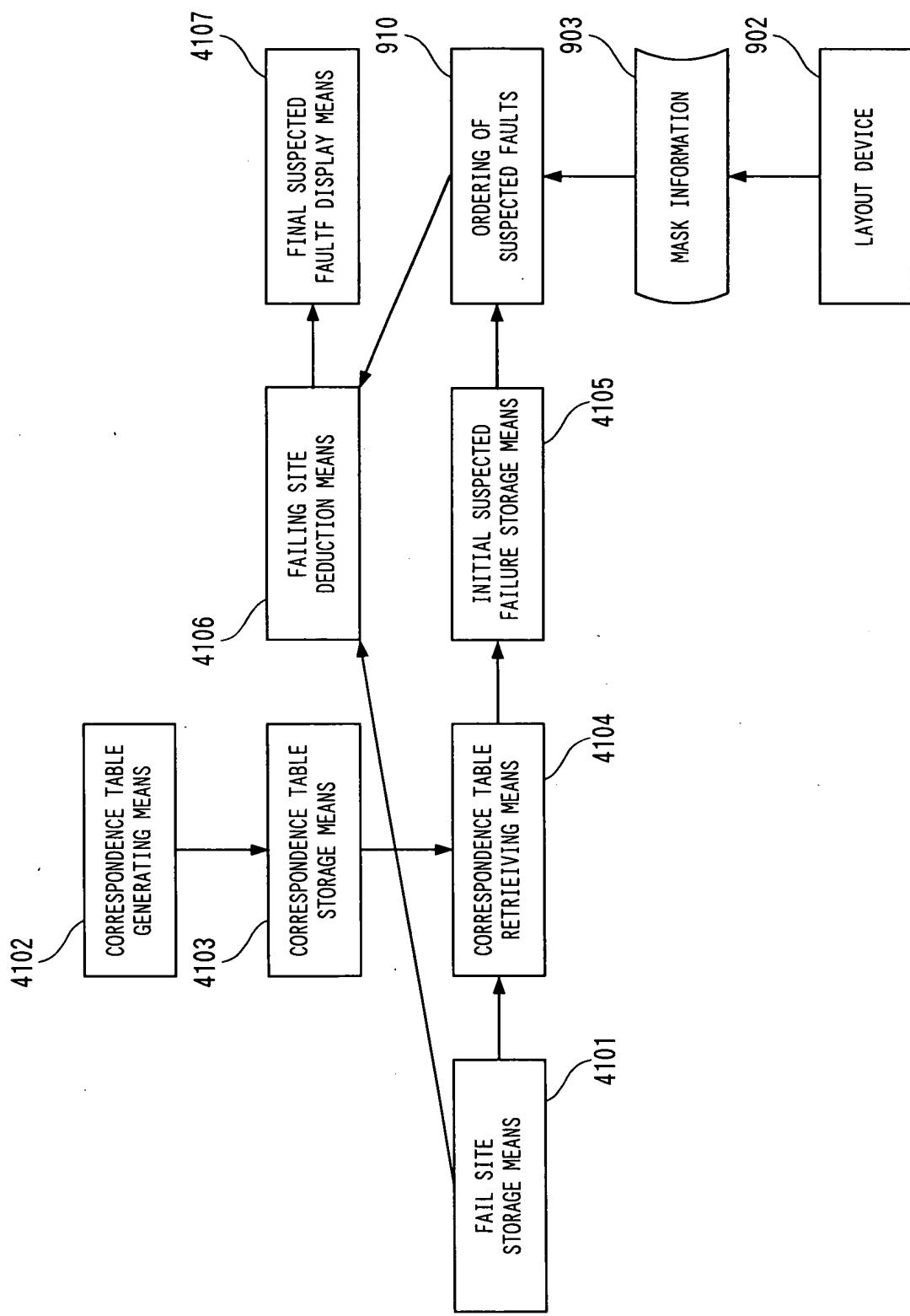


FIG. 45

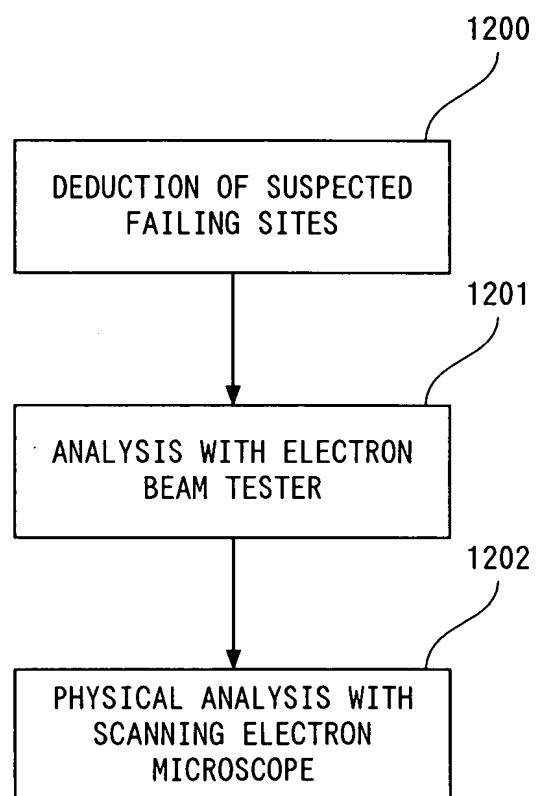


FIG. 46

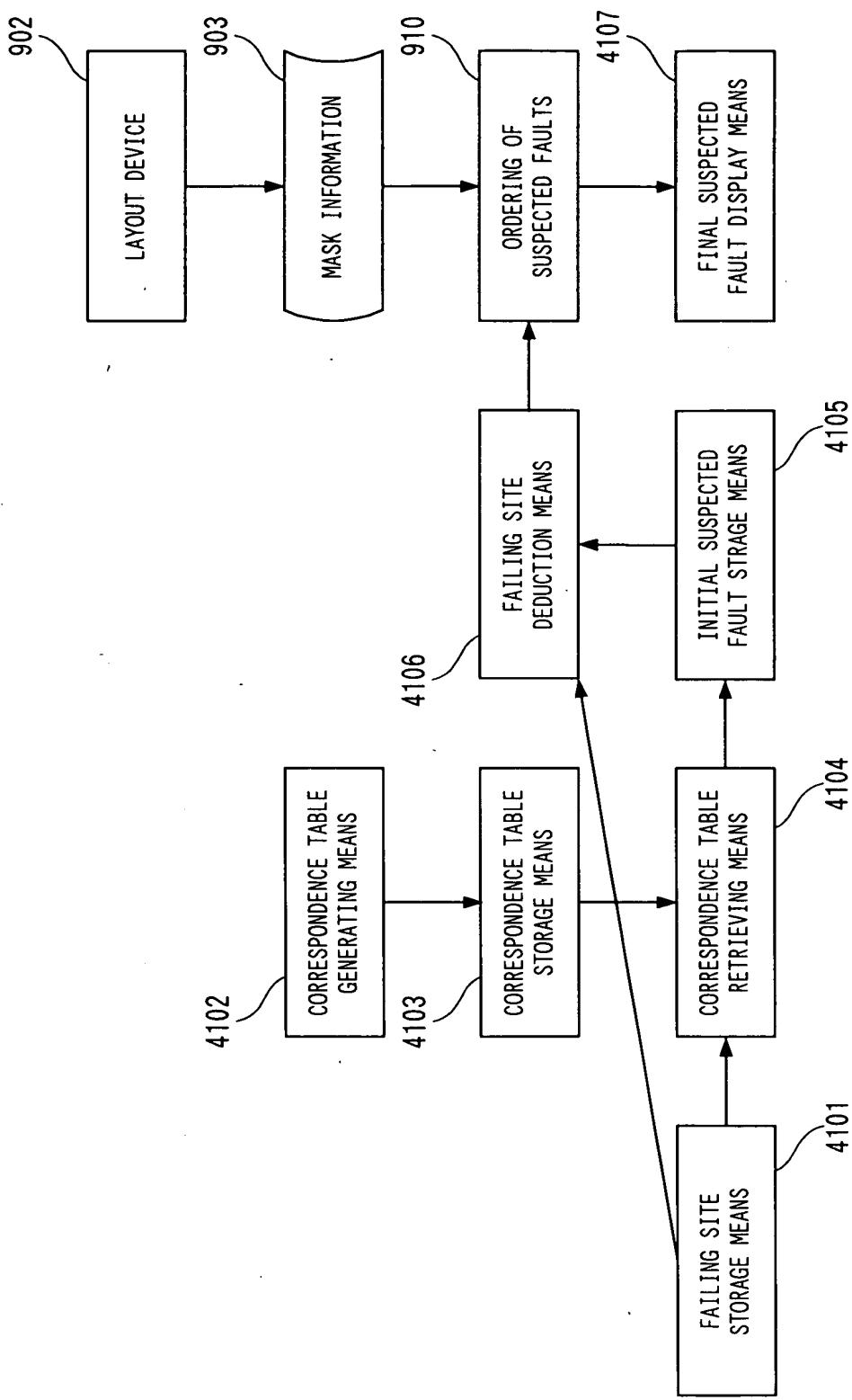


FIG. 47

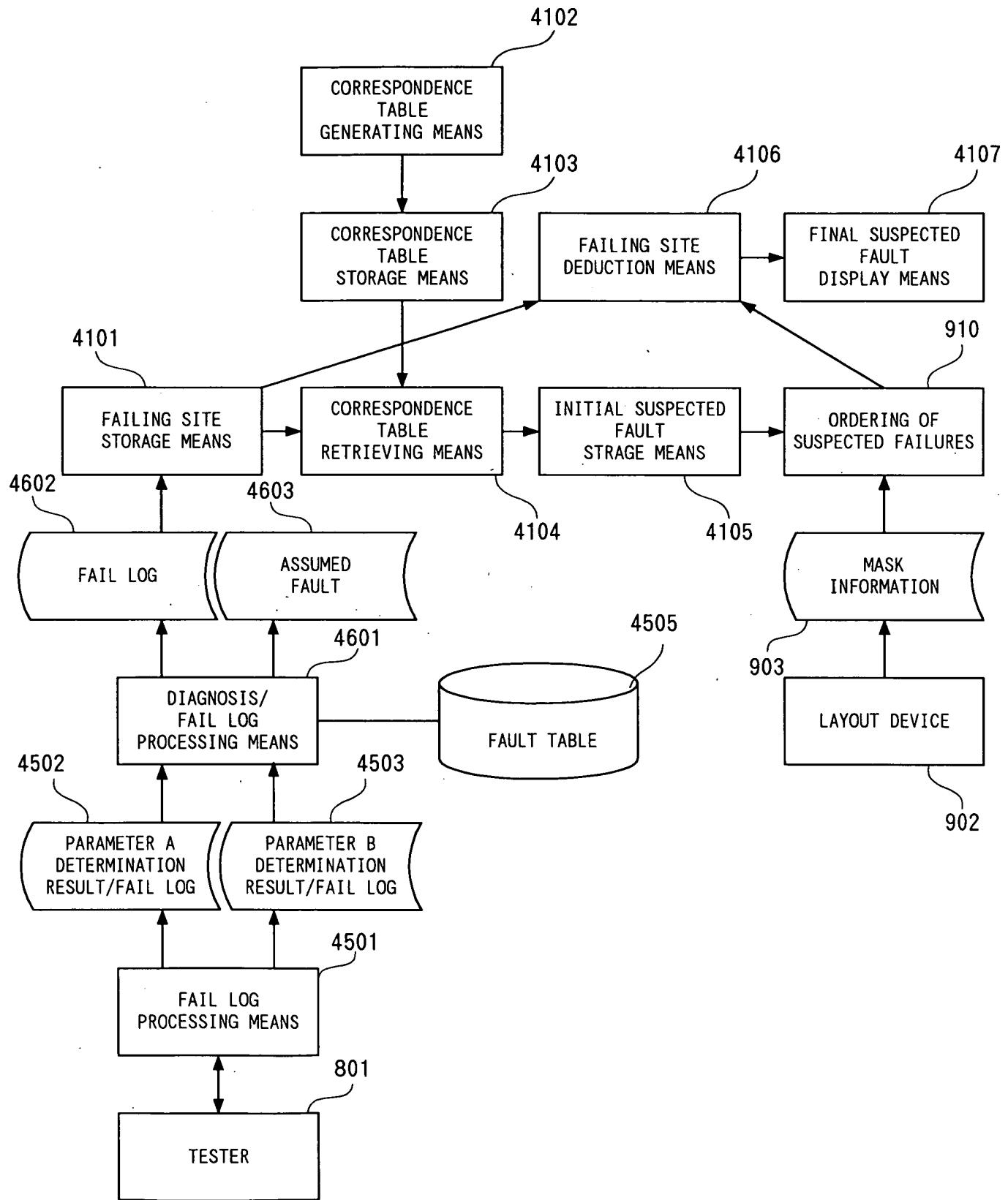


FIG. 48
PRIOR ART

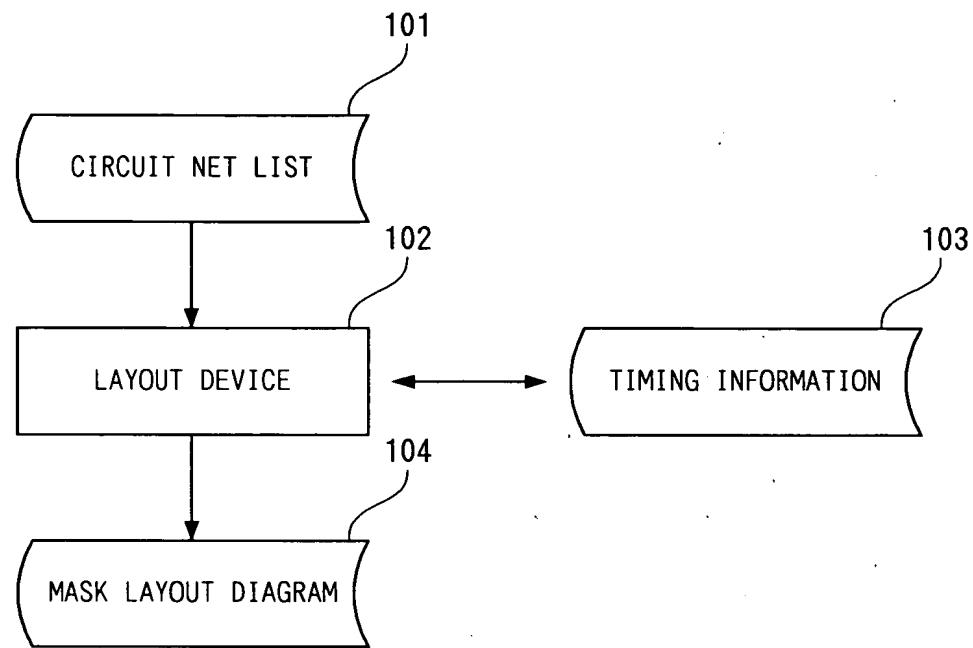


FIG. 49

PRIOR ART

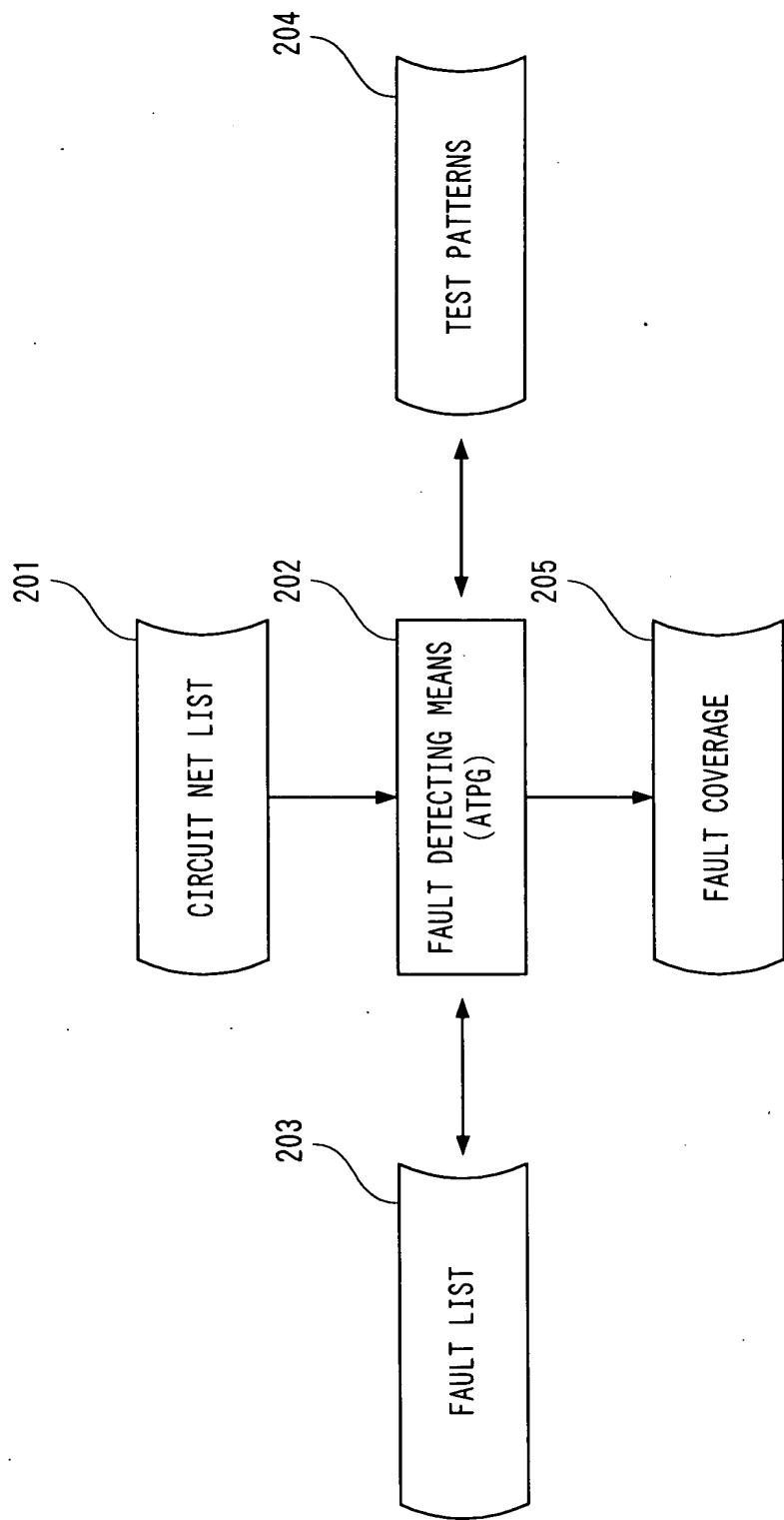
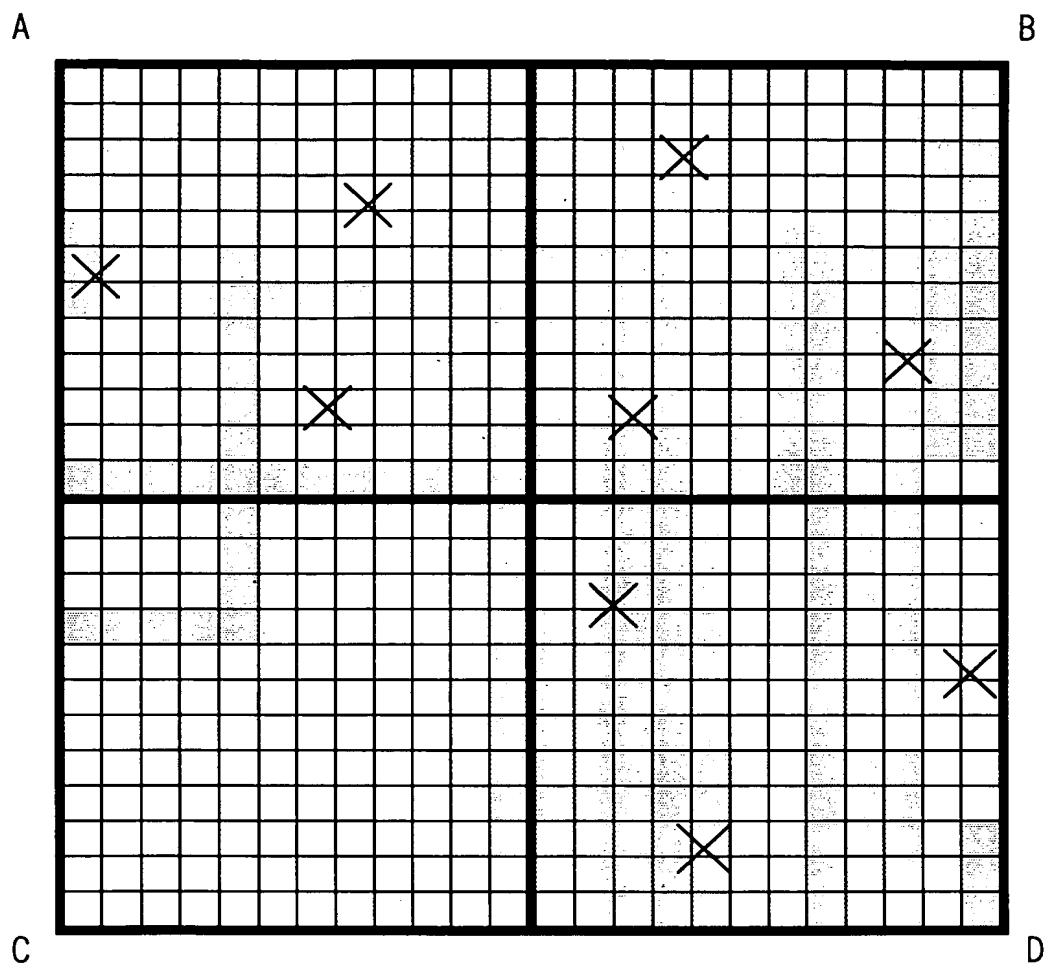


FIG. 50



- PORTION WITH MASK MASK PRESENCE RATE
 $B > D > A > C$
- PORTION WITHOUT MASK
- FAULT CAUSING SITE